=> d his

```
(FILE 'USPAT' ENTERED AT 19:52:23 ON 24 JUN 92)
              SET PAGELENGTH 62
              SET LINELENGTH 78
L1            3 S DATASUIT OR DATAGLOVE
```

=> d 1-3 cit date ab

1. 5,047,952, Sep. 10, 1991, Communication system for deaf, deaf-blind, or
non-vocal individuals using instrumented glove; James P. Kramer, et al.,
395/2; 341/20; 381/36; 434/229 [IMAGE AVAILABLE]

                                          L1: 1 of 3
TITLE: Communication system for deaf, deaf-blind, or non-vocal
                  individuals using instrumented glove
US PAT NO: 5,047,952   DATE ISSUED: Sep. 10, 1991
                [IMAGE AVAILABLE]
APPL-NO: 07/258,204   DATE FILED: Oct. 14, 1988

ABSTRACT:
A communication system for deaf, deaf-blind, or non-vocal individuals
includes an instrumented glove for obtaining electrical signals indicative of
a hand configuration of a first individual. Strain gage sensors in the glove
flex with movement of the hand. Each sensor includes a tension strain gage
and a compression strain gage which are serially connected and form two legs
in a bridge circuit. Signals from the bridge circuit are amplified and
digitized and applied to a computer which includes an adaptive pattern
recognition algorithm which is responsive to hand-state vectors for
recognizing letter beacons in hand-space. A second individual communicates
24 JUN 92 19:53:54   U.S. Patent & Trademark Office   P0004

                                          L1: 1 of 3
with the first individual through the computer system using a portable
keyboard. The output devices for communicating to the first and second
individuals depend on the visual, vocal and hearing capabilities of the
individuals and can be selected from a voice synthesizer, LCD monitor, or
braille display.

2. 4,986,280, Jan. 22, 1991, Hand position/measurement control system; Beth
Marcus, et al., 128/774; 33/512; 128/782 [IMAGE AVAILABLE]

                                          L1: 2 of 3
TITLE: Hand position/measurement control system
US PAT NO: 4,986,280   DATE ISSUED: Jan. 22, 1991
                [IMAGE AVAILABLE]
APPL-NO: 07/222,092   DATE FILED: Jul. 20, 1988

ABSTRACT:
A system is described for sensing the relative angular orientation of two
relatively movable joint segments of a living body joined together at a
joint. The system comprises at least two links coupled together about a pivot
axis so that the links are pivotable relative to one another about the axis
so as to define a variable mechanical angle between the links about the axis.
The two links are secured respectively to the joint segments so that the
links pivot about the pivot axis when the joint segments pivot about said
joint. A Hall effect sensor is used to accurate sense the mechanical angle.

The mechanical angle sensed by the sensor is then correlated with the actual angle made by the joint segments. The arrangement is used with each finger and thumb joint of the hand to provide data representative of finger and thumb orientations of a hand.

3. 4,972,074, Nov. 20, 1990, Optical attenuator movement detection system; Scott M. Wright, 250/227.11, 221, 227.24 [IMAGE AVAILABLE]

```
                                        L1: 3 of 3
TITLE:         Optical attenuator movement detection system
US PAT NO:     4,972,074              DATE ISSUED:   Nov. 20, 1990
               [IMAGE AVAILABLE]
APPL-NO:       07/335,833             DATE FILED:    Apr. 10, 1989
```

ABSTRACT:
An optical attenuation measurement system is provided for obtaining signals proportional to movement of a system to which it is attached. The measurement system includes a light source positioned within a length of conduit in which the light emitted will produce multiple reflections. A fiber optic cable is slidably disposed within the conduit to transmit the radiation emitted from the light source gathered thereby. The relative displacement of the fiber optic cable to the light source produces a signal as a function of this displacement which is converted into electrical signals by a light detecting element at the opposite end of the cable. The system is particularly useful to form an interactive device for control of a remote intelligent machine, robot or the like. For example, the system may be used on an operator's hand to detect movement of the hand and fingers for controlling a robotic hand which will mimick the operator's hand movements.

=>

=> d his

        (FILE 'USPAT' ENTERED AT 18:47:52 ON 24 JUN 92)
                    SET PAGELENGTH 62
                    SET LINELENGTH 78
L1   11 S VIRTUAL ENVIRONMENT
L2   11 S VIRTUAL ENVIRONMENT#
L3   0 S COMPUTER-GENERATED WORLD#
L4   3 S ARTIFICIAL REALITY

=> d 1-3 cit date ab

1. 5,025,314, Jun. 18, 1991, Apparatus allowing remote interactive use of a
plurality of writing surfaces; John C. Tang, et al., 358/93; 178/18; 434/309,
350 [IMAGE AVAILABLE]

                                                    L4: 1 of 3
TITLE: Apparatus allowing remote interactive use of a plurality of
                    writing surfaces
US PAT NO: 5,025,314   DATE ISSUED: Jun. 18, 1991
                [IMAGE AVAILABLE]
APPL-NO: 07/559,486   DATE FILED: Jul. 30, 1990
24 JUN 92 19:01:49   U.S. Patent & Trademark Office   P0018

                                                    L4: 1 of 3

ABSTRACT:
Remote interactive use of a plurality of writing surfaces, such as special
wall mounted whiteboards and the like, is facilitated by an apparatus which
includes, for each writing surface, a translucent screen acting as the
writing surface itself, a video camera located behind the translucent screen
for receiving an image of indications imparted upon the translucent screen,
and a video projector for projecting onto the back side of the translucent
screen a composite of the images imparted upon each of the translucent
screens. Backlighting of a user is employed to allow presentation of the
processes of imparting, using and referring to the indicia together with the
indicia itself. Proper ambient lighting also provides a limited three
dimensional view of the user. Audio portions of interactive work may be
captured by a microphone and transmitted to speakers in conjunction with the
video portion of the interactive work. An audio/video mixing resource may be
employed to combine the images of indicia and audio from various worksites
for presentation. Low bandwidth of the present system facilitates compression
and use with emerging commercial communications standards (e.g., ISDN).

2. 5,021,976, Jun. 4, 1991, Method and system for generating dynamic,
interactive visual representations of information structures within a
computer; Alan D. Wexelblat, et al., 395/159; 340/747; 364/146, 188 [IMAGE
AVAILABLE]

                                                    L4: 2 of 3
TITLE: Method and system for generating dynamic, interactive visual
                    representations of information structures within a computer
US PAT NO: 5,021,976   DATE ISSUED: Jun. 4, 1991
                [IMAGE AVAILABLE]
APPL-NO: 07/271,091   DATE FILED: Nov. 14, 1988

ABSTRACT:

A method and system for generating dynamic, interactive visual
representations of information structures within a computer which enable
humans to efficiently process vast amounts of information. The boundaries of
the information system containing the information to be processed are
established and a set of mathematical relationships is provided which
indicates the degree of correlation between parameters of interest to a user
and segments of information contained within the boundaries. A visual display
is generated for the user which has a plurality of different iconic
representations and visual features corresponding to the parameters defined
by the mathematical relationships. The iconic representations and visual
features of the visual display change with the movement of the mathematical
relationships within the boundaries of the information system according to
the degree of correlation between the parameters of interest and the segment
of information through which the mathematical relationships are passing.

3.   4,843,568, Jun. 27, 1989, Real time perception of and response to the
actions of an unencumbered participant/user; Myron W. Krueger, et al.,
382/16; 358/93, 107; 395/135

                                                    L4: 3 of 3
TITLE: Real time perception of and response to the actions of an
               unencumbered participant/user
US PAT NO: 4,843,568   DATE ISSUED: Jun. 27, 1989
APPL-NO: 06/850,770   DATE FILED: Apr. 11, 1986
24 JUN 92 19:01:56   U.S. Patent & Trademark Office   P0019

                                                    L4: 3 of 3

ABSTRACT:
Apparatus and method for using an image of the human body to control real
time computer events wherein data regarding a participant are acquired
through any means of imaging without marking the participant or requiring
that he or she use or wear a stimulus source, sensing device or special
clothing. Perception and feature analysis are carried out by specialized
circuitry and computer software, and response to perception is expressed
using any device controllable by a computer. Participants generally are
unaware of processing delays between action and reaction, and their
perception of an event is similar to dealing with a human being or animate
creature. Perception and response occur in real time with action and reaction
closely coupled.

=>

=> d his

          (FILE 'USPAT' ENTERED AT 18:47:52 ON 24 JUN 92)
                    SET PAGELENGTH 62
                    SET LINELENGTH 78
L1   11 S VIRTUAL ENVIRONMENT

=> d 1-11 cit date ab

1. 5,107,443, Apr. 21, 1992, Private regions within a shared workspace;
Randall B. Smith, et al., 395/158; 380/3 [IMAGE AVAILABLE]

                                             L1: 1 of 11
TITLE: Private regions within a shared workspace
US PAT NO: 5,107,443   DATE ISSUED: Apr. 21, 1992
                [IMAGE AVAILABLE]
APPL-NO: 07/241,525   DATE FILED: Sep. 7, 1988

ABSTRACT:
In a shared navigable workspace that is presented at more than one
workstation, a region is made private in response to a user request. The user
can also indicate the region's level of privacy by indicating levels of
access of different users. The private region's contents are displayed only
to users that have visual access; a non-informative pattern covers the
region's area on the displays of other users. The private region and its
contents can be modified only by a user with access to modify. When a user
requests movement of a pointer into the private region, the pointer can be
presented in the private region if the user has sufficient access; otherwise,
the pointer would be kept outside the private region's boundary. If a user
requests a transition into the private region by selecting a selectable
transition unit, called a teleporter, the request would be denied unless the
user has sufficient access. The pointer can operate according to a physical
metaphor in which it picks up, holds, and puts down other objects, and the
user can be permitted to move an object into the private region or to pick up
24 JUN 92 18:48:48   U.S. Patent & Trademark Office   P0003

                                             L1: 1 of 11
an object within the private region only if the user has sufficient access.
Within such a metaphor, a key display object held by a user's pointer can
indicate that the user has sufficient access to move the pointer into a
corresponding private region; if the user's pointer is not holding the key,
it cannot move into the private region.

2. 5,072,412, Dec. 10, 1991, User interface with multiple workspaces for
sharing display system objects; D. Austin Henderson, Jr., et al., 395/159,
158 [IMAGE AVAILABLE]

                                             L1: 2 of 11
TITLE: User interface with multiple workspaces for sharing display
                system objects
US PAT NO: 5,072,412   DATE ISSUED: Dec. 10, 1991
                [IMAGE AVAILABLE]
APPL-NO: 07/030,766   DATE FILED: Mar. 25, 1987

ABSTRACT:
Workspaces provided by an object-based user interface appear to share windows
and other display objects. Each workspace's data structure includes, for each

window in that workspace, a linking data structure called a placement which
links to the display system object which provides that window, which may be a
display system object in a preexisting window system. The placement also
contains display characteristics of the window when displayed in that
workspace, such as position and size. Therefore, a display system object can
be linked to several workspaces by a placement in each of the workspaces'
data structures, and the window it provides to each of those workspaces can
have unique display characteristics, yet appear to the user to be the same
window or versions of the same window. As a result, the workspaces appear to
be sharing a window. Workspaces can also appear to share a window if each
workspace's data structure includes data linking to another workspace with a
placement to the shared window. The user can invoke a switch between
workspaces by selecting a display object called a door, and a back door to
the previous workspace is created automatically so that the user is not
trapped in a workspace. A display system object providing a window to a
workspace being left remains active so that when that workspace is reentered,
the window will have the same contents as when it disappeared. Also, the
placements of a workspace are updated so that when the workspace is reentered
its windows are organized the same as when the user left that workspace. The
user can enter an overview display which shows a representation of each
workspace and the windows it contains so that the user can navigate to any
workspace from the overview.

3. 5,038,281, Aug. 6, 1991, Acceleration of system interrupts between
operating systems in guest-host relationship; Anthony M. Peters, 395/700;
364/241.2, 280, 280.8, 280.9, 281, 281.3, 281.6, DIG.1; 395/725 [IMAGE
AVAILABLE]

                                              L1: 3 of 11
TITLE: Acceleration of system interrupts between operating systems in
                  guest-host relationship
US PAT NO: 5,038,281   DATE ISSUED: Aug. 6, 1991
                [IMAGE AVAILABLE]
APPL-NO: 06/909,523   DATE FILED: Sep. 19, 1986

ABSTRACT:
This disclosure describes the acceleration of system interrupts between one
operating system and another operating system which run in a guest-host
24 JUN 92 18:48:52   U.S. Patent & Trademark Office   P0004

                                              L1: 3 of 11
relationship. The execution time required by the host operating system (HOS)
to service system interrupts is substantially reduced, thus allowing the
guest operating system (GOS) to execute more efficiently. The invention is
implemented by enhancing HOS supervisor services and HOS dispatching
functions so that GOS resident supervisor functions are bypassed.

4. 5,010,500, Apr. 23, 1991, Gesture-modified diagram for retrieval of image
resembling diagram, with parts selectable for further interactive retrieval;
Ranjit Makkuni, et al., 395/155; 340/706; 382/13, 56; 395/140, 156 [IMAGE
AVAILABLE]

                                              L1: 4 of 11
TITLE: Gesture-modified diagram for retrieval of image resembling
                  diagram, with parts selectable for further interactive
                  retrieval
US PAT NO: 5,010,500   DATE ISSUED: Apr. 23, 1991

[IMAGE AVAILABLE]
APPL-NO: 07/303,351   DATE FILED: Jan. 26, 1989

ABSTRACT:
Recorded video segments are retrieved and displayed through a user interface
that employs gestures. The user provides gestures by moving a mouse, and the
resulting signals indicate a diagram. Data identifying the diagram is used to
access a data structure to obtain data indicating which of a set of
interactive line drawings includes features most closely resembling the
diagram. The interactive line drawing with features closest to the diagram
can then be displayed. When the user selects a part of the line drawing, a
menu is displayed that includes a description of the video segments that
relate to that part. To assist the user in providing gestural input, a
preliminary diagram is displayed, reducing the amount of information the user
must provide. The user can change parts of the diagram to obtain a modified
diagram resembling features that appear in a desired line drawing. The
diagrams and interactive line drawings can be displayed on a workstation
display screen, while the video segments can be displayed on a video monitor
screen by a video disk player under control of the workstation CPU.

5.   4,984,179, Jan. 8, 1991, Method and apparatus for the perception of
computer-generated imagery; Jonathan D. Waldern, 364/514; 340/705, 980;
358/104; 364/516, 550; 434/43 [IMAGE AVAILABLE]

                                              L1: 5 of 11
TITLE: Method and apparatus for the perception of computer-generated
                imagery
US PAT NO: 4,984,179   DATE ISSUED: Jan. 8, 1991
                [IMAGE AVAILABLE]   DISCL-DATE: Nov. 28, 2006
APPL-NO: 07/404,101   DATE FILED: Sep. 7, 1989
FRN-PR. NO: 8701288   FRN FILED: Jan. 21, 1987
FRN-PR. CO: United Kingdom
REL-US-DATA: Division of Ser. No. 144,090, Jan. 15, 1988, Pat. No.
                4,884,219.

ABSTRACT:
The invention relates to a 3-dimensional computer graphics system in which an
operator can effectively interact with a virtual model generated and
displayed by a computer. In one embodiment the operator wears a helmet fitted
with means which enable both the location of his head and its coordinates
relative to the virtual model to be monitored and the information sent to
computer. The helmet carries miniature VDUs which direct separate images to
24 JUN 92 18:49:21   U.S. Patent & Trademark Office   P0005

                                              L1: 5 of 11
his individual eyes so that the image is perceived stereoscopically. The
movement of the operator's eyes is also monitored by means mounted within
housings of the helmet and data representing the operator's direction of
vision sent to the computer. The data transmitted to the computer is used to
modify the image of the model as perceived by the operator to enhance its
realism.

6.   4,896,290, Jan. 23, 1990, Method for routing events from key strokes in a
multi-processing computer systems; Deborah A. Rhodes, et al., 395/650;
340/711, 721; 364/927.2, 927.63, 928, 928.6, 929.12, 942, 942.2, 948.3,
948.32, 949.91, 949.92, 957, 957.6, DIG.2 [IMAGE AVAILABLE]

TITLE: Method for routing events from key strokes in a
                multi-processing computer systems
US PAT NO: 4,896,290   DATE ISSUED: Jan. 23, 1990
                [IMAGE AVAILABLE]
APPL-NO: 07/088,936   DATE FILED: Aug. 24, 1987

ABSTRACT:
A computer system in which multiple processes may run concurrently includes a
window manager for displaying windows associated with different processes.
One of the processes represented by a window may be designated as active.
Keystrokes are translated by a keyboard driver to events represented by
keycodes. The keycodes are routed to processes with which they are associated
by reference to a routing table. Unless otherwise indicated, a keycode is
routed to the active process. Where a keycode is associated with and
transferred to the window manager, subsequent keycodes are stored in a
typeahead buffer. The window manager may modify the routing table. After
completion of the window manager operation, all keycodes remaining in the
buffer are routed to their associated processes as determined by the modified
routing table.

7.   4,860,291, Aug. 22, 1989, Test vector definition system employing
template concept; Wendell W. Damm, et al., 371/27, 17

TITLE: Test vector definition system employing template concept
US PAT NO: 4,860,291   DATE ISSUED: Aug. 22, 1989
APPL-NO: 07/138,269   DATE FILED: Dec. 28, 1987

ABSTRACT:
A user interface for a tester or simulator includes a menu for creating
templates. The templates organize a set of the user's decisions regarding the
timing, direction, and masking of all of the signals occurring during one
tester cycle into a convenient form for use in another menu where test
vectors are actually specified. In this other menu, the templates serve as a
shorthand way of describing the function of each channel and its timing
characteristics during one tester cycle. Thus, these templates organize and
simplify the user's decision making, since many decisions, that would
otherwise have to be made again and again, may now be made only once and then
incorporated again and again by reference to the appropriate template. The
use of the templates also conserves total memory requirements. The template
menu can provide visual feedback that includes timing diagrams and icons to
assist the user in constructing the template.

8.   4,857,902, Aug. 15, 1989, Position-dependent interactivity system for
image display; Michael Naimark, et al., 340/709, 724; 358/103 [IMAG
24 JUN 92 18:49:48   U.S. Patent & Trademark Office   P0006
AVAILABLE]

TITLE: Position-dependent interactivity system for image display
US PAT NO: 4,857,902   DATE ISSUED: Aug. 15, 1989
                [IMAGE AVAILABLE]
APPL-NO: 07/050,196   DATE FILED: May 14, 1987

ABSTRACT:
An interactive video display system with tight coupling between user-input

and the images displayed to provide a feeling of real control by the user. A
library of frames of video data is stored in randomly accessible data
locations, such as an optical video disc. The video data in each frame in the
library is assigned a virtual position in a pre-defined data space, such that
the visual image in each frame is related to visual images in other frames by
virtual position in the data space. User input is provided through track ball
or mouse generating displacement signals. The input signal is translated to
an updated virtual position in the data space relative to a previous virtual
position and the next frame having the updated virtual position is displayed
next.

9.   4,583,166, Apr. 15, 1986, Roll mode for cached data storage; Michael H.
Hartung, et al., 395/425; 364/228.3, 232.1, 236.2, 238.4, 242.3, 242.5, 243,
243.4, 243.41, 248.1, 249, 252, 261, 261.1, 262.4, 262.5, 927.92, 927.94,
927.97, 927.99, 931.11, 931.48, 940, 940.1, 940.4, 942.3, 942.6, 948.1,
948.11, 952, 952.1, 957, 957.1, 957.3, 959.1, 961.2, 964, 964.2, 964.23, 965,
965.4, 965.7, 976, 978.1, DIG.1, DIG.2 [IMAGE AVAILABLE]

                                             L1: 9 of 11
TITLE: Roll mode for cached data storage
US PAT NO: 4,583,166   DATE ISSUED: Apr. 15, 1986
                [IMAGE AVAILABLE]
APPL-NO: 06/433,599   DATE FILED: Oct. 8, 1982

ABSTRACT:
A so-called "roll mode" technique provides block transfer with a disk-type of
direct-access data-storage device (DASD). A set of chained commands for
accessing record areas enables rapidly accessing a plurality of records
within a given DASD cylinder of tracks. The rotational position of the
surfaces is checked. The command within the chain, irrespective of its
location, having the closest logical rotational proximity to the instant
rotational position of the surfaces is selected as the first command in the
chain. The chain is executed beginning at the indicated rotational position
selected command through the end of the chain and then wrapped to the
beginning of the original chain and continuing on until the command
immediately preceding the rotational position selected command has been
executed.

10.   4,533,996, Aug. 6, 1985, Peripheral systems accommodation of guest
operating systems; Michael H. Hartung, et al., 395/275; 364/228.2, 228.5,
236.2, 243, 243.4, 254, 254.3, 256.3, DIG.1; 395/400 [IMAGE AVAILABLE]

                                             L1: 10 of 11
TITLE: Peripheral systems accommodation of guest operating systems
US PAT NO: 4,533,996   DATE ISSUED: Aug. 6, 1985
                [IMAGE AVAILABLE]
APPL-NO: 06/351,558   DATE FILED: Feb. 23, 1982

ABSTRACT:
A peripheral system attached to a host having plural virtual machines
24 JUN 92 18:50:15   U.S. Patent & Trademark Office   P0007

                                             L1: 10 of 11
accommodates the virtual machines via "guest" attribute signals signifying
that a given chain of peripheral or I/O commands are virtual machine sourced
(GO bit). The attribute signals may include modifier control signals to
enable the peripheral system to adjust to virtual machine operations of the

host. In particular, virtual machine "minidisks" are accommodated.

11.   4,412,286, Oct. 25, 1983, Tightly coupled multiple instruction multiple
data computer system; Brendan O'Dowd, et al., 395/325; 364/228.3, 228.7,
228.8, 229, 229.2, 229.4, 230, 230.3, 240.1, 241.7, 242.6, 242.9, 242.92,
253, 254, 254.3, 256.3, 263, 271, 271.2, 271.3, 280, 280.2, DIG.1; 395/650,
800 [IMAGE AVAILABLE]

                                                    L1: 11 of 11
TITLE: Tightly coupled multiple instruction multiple data computer
                system
US PAT NO: 4,412,286   DATE ISSUED: Oct. 25, 1983
                [IMAGE AVAILABLE]
APPL-NO: 06/246,427   DATE FILED: Mar. 23, 1981
REL-US-DATA: Continuation-in-part of Ser. No. 190,510, Sep. 25, 1980,
                abandoned.

ABSTRACT:
A concurrent processing system utilizes a generalized linearly expandable
data transfer bus architecture to tightly couple data processors, memory and
I/O devices. The system is suitable for multiple instruction multiple data
processing, and operates by transmitting and receiving complete transaction
codes fully identifying the target device by specifying a process code. Data
processing memories and I/O devices may be dynamically assigned to a process
by specifying the process code thus providing great flexibility in
utilization of system resources. Processors, memories and I/O devices are
connected together by means of interfaces which are connected to a
bidirectional bus. The complete data transaction preferably occurs during one
clock period, although four additional clock periods are used to complete a
bus transaction, namely, arbitration, match recognition, data validation and
acknowledgement of receipt.
All the interfaces examine each transaction on the bus 5 preferably
simultaneously, and allow the transaction to pass to a device and or I/O, if
control registers in the interfaces correspond to those of transaction.
The five bus transactions are overlapped in time so that a data transfer may
occur with each clock cycle resulting in a data pipeline system of very high
data transfer rates.

=>

?rf
Your last SELECT statement was:
    S (VIRTUAL ENVIRONMENT)

Ref   Items   File
———   —————   ————
N1   22   2: INSPEC 2_69-92/9208W1
N2   3   8: COMPENDEX PLUS_1970-1992/JUN
N3   0   6: NTIS_64-92/9207B2
N4   0   92: IHS INTERNATIONAL STANDARDS AND SPECIFICATIONS_
N5   0   103: ENERGY SCIENCE & TECHNOLOGY_1974-9205B1
N6   0   108: AEROSPACE _ 62-92/ISS13
N7   0   144: PASCAL_1973 - 1991 DEC
N8   0   275: COMPUTER DATABASE_83-92/ISSUE24
N9   0   582: JAPAN TECHNOLOGY _ 1985-1992 MAY
N10   0   675: COMPUTER ASAP_83-92/ISSUE 24

    2 files have one or more items; file list includes 10 files.

?save temp
Temp SearchSave "TB006" stored
?b n1:n2;exs
        24jun92 17:34:47 User214300 Session B25.2
                $2.25   0.050 Hrs File411
    $2.25 Estimated cost File411
    $0.15 TYMNET
    $2.40 Estimated cost this search
    $2.47 Estimated total session cost   0.054 Hrs.

SYSTEM:OS - DIALOG OneSearch
   File   2:INSPEC 2 69-92/9208W1
          (COPR. IEE 1992)
 **FILE002: Weekly updates and Alerts are now available in INSPEC!
   File   8:COMPENDEX PLUS 1970-1992/JUN
Executing TB006
        S1   25   (VIRTUAL ENVIRONMENT)
?t s1/5/1-25

   1/5/1   (Item 1 from file: 2)
04169640   INSPEC Abstract Number: C9207-7810C-033
   Title: Virtual worlds and their role in investigating change in cognitive
models of motion
   Author(s): Whitelock, D.; Holland, S.
   Author Affiliation: Inst. of Educ. Technol., Open Univ., Milton Keynes,
UK
   Conference Title: IEE Colloquium on 'Using Virtual Worlds' (Digest
No.093)   p.2/1-5
   Publisher: IEE, London, UK
   Publication Date: 1992   Country of Publication: UK   40 pp.
   Conference Sponsor: IEE
   Conference Date: 15 April 1992   Conference Location: London, UK
   Language: English   Document Type: Conference Paper (PA)
   Treatment: Practical (P)
   Abstract: Research into children's ideas about physical phenomena has
shown that these ideas are very different from those of the scientist.
There is a large body of research data, mainly descriptive accounts of
children's reasoning, which is not always easy to interpret. There is also

a difference of opinion about how these conceptions should be viewed: it is not clear whether children's ideas in dynamics should be described as systematic mental structures or as ad hoc temporary constructions. It is the authors' belief that commonsense ideas about motion can be represented as causal models which are different from the Newtonian view of motion. Student's failure to answer dynamics problems correctly reveals a lack in their knowledge of the causal principles that underly the formulas they have been taught. They believe that experiences that enable students to acquire accurate causal models will make them less likely to develop misconceptions, and better able to understand the principles underlying Newtonian mechanics. They hypothesise that a sequence of pre-designed activities carried out in a virtual environment with a head-tracking head-mounted display and a dataglove will lead students to build up an accurate qualitative model of the laws of motion more effectively than conventional computer simulations or instruction using physical apparatus such as found in schools. They propose to build a collection of virtual worlds designed to aid particular stages of acquiring accurate causal models of motion. (32 Refs)
   Descriptors: computer aided instruction; computer graphics; human factors ; physics computing
   Identifiers: computer aided instruction; physics education; mental structures; causal models; Newtonian mechanics; virtual environment; head-tracking head-mounted display; dataglove; laws of motion; computer simulations
   Class Codes: C7810C (Computer-aided instruction); C6130B (Graphics techniques)

   1/5/2   (Item 2 from file: 2)
04147751   INSPEC Abstract Number: C9206-7420-064
 Title: Description of semantics of robot programming languages
   Author(s): Zielinski, C.
   Author Affiliation: Inst. of Autom. Control, Warsaw Univ. of Technol., Poland
   Journal: Mechatronics   vol.2, no.2   p.171-98
   Publication Date: April 1992   Country of Publication: UK
   CODEN: MECHER   ISSN: 0957-4158
   U.S. Copyright Clearance Center Code: 0957-4158/92/$5.00+0.00
   Language: English   Document Type: Journal Paper (JP)
   Treatment: Practical (P); Theoretical (T)
   Abstract: The paper presents a formal method of defining semantics of robot programming language instructions. These languages are divided into three levels: joint, manipulator and object level. As a criterion of this division, the abstract notion to which the instructions of the languages refer is used. Moreover, depending on the precision of the semantics definition of a particular language, these languages are classified into three types (point-to-point, bonded-path and continuous-path). The method described is capable of defining semantics of instructions independently of the type or the level of the language considered. To achieve this a concept of virtual environment is introduced. The description of the state of the system, consisting of the virtual environment, data base, variables and program control flow subsystem, is considered on each level. The object level languages are dealt with in particular detail. The attributes of the objects as well as the relations between them are taken into account. The method does not depend on the type of industrial robot used. (10 Refs)
   Descriptors: high level languages; robot programming
   Identifiers: joint level languages; manipulator level languages; point-to-point languages; bounded-path languages; continuous-path languages

; semantics; robot programming languages; virtual environment; virtual
environment; data base; program control flow subsystem; object level
languages
     Class Codes: C7420   (Control engineering); C3390   (Robotics); C6140D (
High level languages)

     1/5/3   (Item 3 from file: 2)
     04052607   INSPEC Abstract Number: C9202-6180-018
      Title: Progress in artificial reality technology
      Author(s): Hirose, M.
      Journal: Journal of the Japan Society of Precision Engineering   vol.57,
     no.8   p.1315-20
       Publication Date: Aug. 1991   Country of Publication: Japan
       CODEN: JJPEAD   ISSN: 0912-0289
       Language: Japanese   Document Type: Journal Paper (JP)
       Treatment: Practical (P)
       Abstract: The author discusses artificial reality, virtual environment,
     human interface, realistic sensation, simulation, computer graphics and
     virtual holography.   (8 Refs)
        Descriptors: computer graphics; digital simulation; user interfaces
        Identifiers: artificial reality technology; virtual environment; human
     interface; realistic sensation; simulation; computer graphics; virtual
     holography
        Class Codes: C6180   (User interfaces); C6130B (Graphics techniques);
     C7420   (Control engineering)

     1/5/4   (Item 4 from file: 2)
     04046488   INSPEC Abstract Number: C9201-7460-032
      Title: Image generation for a virtual environment
      Author(s): McDermott, R.C.
      Conference Title: IEE Colloquium on 'Real World Visualisation - Virtual
     World - Virtual Reality (Digest No.197)   p.5/1-2
       Publisher: IEE, London, UK
       Publication Date: 1991   Country of Publication: UK   52 pp.
       Conference Sponsor: IEE
       Conference Date: 26 Sept. 1991   Conference Location: London, UK
       Language: English   Document Type: Conference Paper (PA)
       Treatment: Practical (P)
       Abstract: The overall objective of this work was the study of the visual
     aspect of the man-machine interface for future aircraft. The primary
     concept was that of the virtual cockpit in which information is presented
     in ways which are easily interpreted, unambiguous, economical and spatially
     consistent with the external world. Such an environment should allow
     experimentation in laboratory conditions or use in simulation of real
     activities. The work was limited to the visual element, although a full
     environment would include, for example, tactile and auditory elements. (0
      Refs)
        Descriptors: aerospace computing; aircraft instrumentation; computer
     animation; graphical user interfaces
        Identifiers: image generation; virtual environment; visual aspect;
     man-machine interface; aircraft; virtual cockpit; simulation
        Class Codes: C7460   (Aerospace engineering); C6180G (Graphical user
     interfaces)

     1/5/5   (Item 5 from file: 2)
     04034670   INSPEC Abstract Number: C9201-3370L-001
      Title: Tele-existence

Author(s): Tachi, S.
Journal: Journal of the Society of Instrument and Control Engineers
vol.30, no.6   p.465-71
  Publication Date: June 1991   Country of Publication: Japan
  CODEN: KESEA4   ISSN: 0453-4662
  Language: Japanese   Document Type: Journal Paper (JP)
  Treatment: General, Review (G)
  (13 Refs)
  Descriptors: computer animation; graphical user interfaces; telecontrol
  Identifiers: tele-existence; tele-presence; artificial reality; virtual
reality; virtual environment; real world; virtual world; tele-reality;
physical world; teleoperated vehicle; teleoperated robot; Naval Ocean
Systems Center
  Class Codes: C3370L (Remote signalling, dispatching and safety devices);
C6180G (Graphical user interfaces); C7420 (Control engineering); C5540B (
Interactive-input devices)

  1/5/6   (Item 6 from file: 2)
04034669   INSPEC Abstract Number: C9201-6180G-002
 Title: Virtual reality and collaboration
  Author(s): Hirose, M.
  Journal: Journal of the Society of Instrument and Control Engineers
vol.30, no.6   p.457-64
  Publication Date: June 1991   Country of Publication: Japan
  CODEN: KESEA4   ISSN: 0453-4662
  Language: Japanese   Document Type: Journal Paper (JP)
  Treatment: General, Review (G)
  (10 Refs)
  Descriptors: computer animation; graphical user interfaces; groupware
  Identifiers: virtual reality; human interface; virtual environment;
communication; realistic sensation; Nouvelle Vague; head mounted display;
collaboration
  Class Codes: C6180G (Graphical user interfaces); C7100 (Business and
administration); C5540B (Interactive-input devices)

  1/5/7   (Item 7 from file: 2)
04015307   INSPEC Abstract Number: B91079872
 Title: Combat vehicle stereo HMD
  Author(s): Rallison, R.D.; Schicker, S.R.
  Author Affiliation: Ralcon Corp., Paradise, UT, USA
  Journal: Proceedings of the SPIE - The International Society for Optical
Engineering   vol.1456   p.179-90
  Publication Date: 1991   Country of Publication: USA
  CODEN: PSISDG   ISSN: 0277-786X
  U.S. Copyright Clearance Center Code: 0 8194 0555 8/91/$4.00
  Conference Title: Large-Screen-Projection, Avionic and Helmet-Mounted
Displays
  Conference Sponsor: SPIE; Soc. Imaging Sci. Technol
  Conference Date: 26-28 Feb. 1991   Conference Location: San Jose, CA,
USA
  Language: English   Document Type: Conference Paper (PA); Journal Paper
(JP)
  Treatment: Practical (P)
  Abstract: Combat vehicles of the future may be devoid of direct vision
ports but will contain multiple displays creating a virtual environment.
The transition from real to virtual can be facilitated by the use of a
helmet mounted display (HMD) that projects a portion of the virtual

environment over the real world. The authors present a simple, light weight color stereo projection system that has the potential for meeting most of the desired characteristics at a reasonable cost. Imaging is accomplished using CR39 ophthalmic substrates off axis 15 degrees and distorted to correct for astigmatism. The images from two sources are transferred to the focuses by coherent fiber image conduit shaped at one end to minimize field curvature. The demonstrated field of view (FOV) is 15v*40h degrees using readily available image conduit and colored transparencies, maximum FOV is 60v*90h degrees. (7 Refs)
   Descriptors: display devices; fibre optics; military equipment
   Identifiers: combat vehicle; fold mirror; combiner; fiber faceplate; catface; stereo HMD; multiple displays; virtual environment; helmet mounted display; CR39 ophthalmic substrates; astigmatism; coherent fiber image conduit; field curvature; field of view; colored transparencies
   Class Codes: B7260   (Display technology and systems); B7910   (Military circuits, components, and equipment); B4125   (Fibre optics)

   1/5/8   (Item 8 from file: 2)
   03928642   INSPEC Abstract Number: C91050018
    Title: A study on visualization of control software design
    Author(s): Hirose, M.; Amari, H.
    Author Affiliation: Tokyo Univ., Japan
    Conference   Title: Computer-Aided   Cooperative   Product   Development. MIT-JSME Workshop Proceedings   p.584-603
    Editor(s): Sriram, D.; Logcher, R.; Fukuda, S.
    Publisher: Springer-Verlag, Berlin, Germany
    Publication Date: 1991   Country of Publication: West Germany   vii+630 pp.
    ISBN: 3 540 54008 3
    Conference   Sponsor: Japanese   Soc.   Mech.   Eng.;   MIT;   Bell   Atlantic Knowledge Syst
    Conference   Date: 20-21 Nov. 1989   Conference Location: Cambridge, MA, USA
    Language: English   Document Type: Conference Paper (PA)
    Treatment: Practical (P)
    Abstract: Virtual environments for software visualization are discussed. Visual representation plays an important role in coordinating or managing large scale system developments. First, the problem of software design for large scale control systems such as the control system for the distribution of regional electric power is discussed from a 'needs' point of view. It is emphasized that the conventional methodology is no longer sufficient for recent large and complex computer system designs.   Second, the use of visualization technology is introduced as a solution to the software crisis mentioned above.   A   method   of   mapping from an original logical representation   into   a   visual   representation is proposed. Finally, implementation of the idea is discussed from a 'seeds' point of view. By using this so called 'virtual environment' technology, the authors could develop a non-text based programming environment. (5 Refs)
    Descriptors: control system CAD; programming environments; virtual machines; visual programming
    Identifiers: control software design; software visualization; large scale system developments; large scale control systems; regional electric power; complex computer system designs; visualization technology; original logical representation; visual representation; virtual environment; non-text based programming environment
    Class Codes: C7420   (Control engineering); C6115   (Programming support); C6110 (Systems analysis and programming)

1/5/9   (Item 9 from file: 2)
03905230   INSPEC Abstract Number: C91042328
 Title: Connectionist modelling of skill dynamics
  Author(s): Ridsdale, G.
  Author Affiliation: Comput. Sci. Dept., Utah Univ., Salt Lake City, UT,
USA
  Journal: Journal of Visualization and Computer Animation   vol.1, no.2
p.66-72
  Publication Date: Dec. 1990   Country of Publication: UK
  CODEN: JVCAEO   ISSN: 1049-8907
  U.S. Copyright Clearance Center Code: 1049-8907/90/020066-07$05.00
  Language: English   Document Type: Journal Paper (JP)
  Treatment: Practical (P)

  Abstract: The paper discusses a method for modelling skilled action for
synthetic actors in a virtual environment. The method guides lower-level
motor skills from a connectionist model of skill memory, implemented as
collections of trained neural networks. The relationship between this work
and that of other projects in task-level animation is discussed, the
principles of connectionist learning are explained, and a series of
experiments testing the concept of connectionist skill modelling are
reviewed. (38 Refs)

  Descriptors: computer animation; learning systems; neural nets
  Identifiers: skill dynamics; skilled action; synthetic actors; virtual
environment; lower-level motor skills; skill memory; trained neural
networks; task-level animation; connectionist learning; connectionist skill
modelling
  Class Codes: C6130B (Graphics techniques); C1230   (Artificial
intelligence); C1240   (Adaptive system theory)

1/5/10   (Item 10 from file: 2)
03823229   INSPEC Abstract Number: B91020876, C91018732
  Title: Implementation and integration of a counterbalanced CRT-based
stereoscopic   display   for   interactive viewpoint control in virtual
environment applications
  Author(s):   McDowall,   I.E.;   Bolas,   M.;   Pieper,   S.;   Fisher,   S.S.;
Humphries, J.
  Author Affiliation: Aerosp. Human Factors Res. Div., NASA Ames Res.
Center, Moffett Field, CA, USA
  Journal: Proceedings of the SPIE - The International Society for Optical
Engineering   vol.1256   p.136-46
  Publication Date: 1990   Country of Publication: USA
  CODEN: PSISDG   ISSN: 0277-786X
  Conference Title: Stereoscopic Displays and Applications
  Conference Sponsor: SPIE; SPSE
  Conference Date: 12-14 Feb. 1990   Conference Location: Santa Clara, CA,
USA
  Language: English   Document Type: Conference Paper (PA); Journal Paper
(JP)
  Treatment: Practical (P)

  Abstract: The authors describe the implementation and integration of the
Ames counterbalanced CRT-based stereoscopic viewer (CCSV). The CCSV was
developed as a supplementary viewing device for the Virtual interface
environment workstation project at NASA Ames in order to provide higher
resolution than is possible with LCD based head-mounted viewers. The CCSV
hardware consists of a counterbalanced kinematic linkage, dual-CRT based
stereoscopic   viewer   with   wide   angle   optics,   video   electronics   box,

dedicated microprocessor system monitoring joint angles in the linkage, host computer interpreting the sensor values and running the application which renders right and left views for the viewer's CRTs. CCSV software includes code resident on the microprocessor system, host computer device drivers to communicate with the microprocessor, a kinematic module to compute viewer position and orientation from sensor values, graphics routines to change the viewing geometry to match viewer optics and movements, and an interface to the application. (15 Refs)

  Descriptors: cathode-ray tube displays; computerised instrumentation; engineering workstations; interactive systems; microcomputer applications; virtual machines

  Identifiers: dual viewer; counterbalanced CRT-based stereoscopic display; interactive viewpoint control; virtual environment; Virtual interface environment workstation; NASA; dedicated microprocessor

  Class Codes: B7260 (Display technology and systems); B7210B (Automatic test and measurement systems); C7410H (Instrumentation); C5540 (Terminals and graphic displays); C7430 (Computer engineering)

  1/5/11   (Item 11 from file: 2)
  03515874   INSPEC Abstract Number: B90004111
  Title: A helmet-mounted virtual environment display system
  Author(s): Rebo, R.K.; Amburn, P.
  Author Affiliation: Air Force Inst. of Technol., Wright-Patterson AFB, OH, USA
  Journal: Proceedings of the SPIE - The International Society for Optical Engineering   vol.1116   p.80-4
  Publication Date: 1989   Country of Publication: USA
  CODEN: PSISDG   ISSN: 0277-786X
  Conference Title: Helmet-Mounted Displays
  Conference Sponsor: SPIE
  Conference Date: 28-29 March 1989   Conference Location: Orlando, FL, USA
  Language: English   Document Type: Conference Paper (PA); Journal Paper (JP)
  Treatment: Practical (P)
  Abstract: The authors present a simple, inexpensive design of a helmet-mounted color display system. The system can be mounted on a variety of helmets, including a bicycle helmet. Color LCD displays are used. The optical decisions are discussed as well as limitations of the system. The entire helmet-mounted system cost about $1000 to build (1989 prices) using off the shelf, readily available hardware, with the exception of the Polhemus tracking device. Issues of depth perception are discussed. Predictive tracking is implemented using a simple Kalman filter. (12 Refs)

  Descriptors: aircraft instrumentation; Kalman filters; liquid crystal displays; tracking systems

  Identifiers: predictive tracking; aircraft helmet; liquid crystal display ; motorcycle helmet; virtual environment; helmet-mounted color display system; bicycle helmet; depth perception; Kalman filter

  Class Codes: B7260 (Display technology and systems); B6140 (Signal processing and detection); B4150D (Liquid crystal devices); B7630 (Avionic systems and instrumentation)

  1/5/12   (Item 12 from file: 2)
  03382659   INSPEC Abstract Number: C89038521
  Title: Through the looking glass (Virtual Environmental Display System)
  Author(s): Watkins, R.
  Journal: Computer Graphics World   vol.11, no.1   p.40-2

Publication Date: Jan. 1988   Country of Publication: USA
CODEN: CGWODH   ISSN: 0271-4159
Language: English   Document Type: Journal Paper (JP)
Treatment: General, Review (G)
Abstract: At NASA Ames Research Center, the Aerospace Human Factors Research Division has developed a helmet-mounted display device that, together with audio and tactile cues, puts the wearer in a computer-generated world, a virtual environment. The author looks at the Virtual Environment Display System (VEDS). (0 Refs)
Descriptors: computer graphic equipment; digital simulation; display devices
Identifiers: digital simulation; computer graphic equipment; display devices; NASA; helmet-mounted display device; computer-generated world; virtual environment; Virtual Environment Display System; VEDS
Class Codes: C5540 (Terminals and graphic displays); C7400 (Engineering
)

1/5/13   (Item 13 from file: 2)
03166776   INSPEC Abstract Number: C88040233
Title: From DataGlove to DataSuit
Author(s): Lasko-Harvill, A.; Blanchard, C.; Smithers, W.; Harvill, Y.; Coffman, A.
Author Affiliation: VPL Res. Inc., Redwood City, CA, USA
Conference Title: Digest of Papers: COMPCON Spring 88. Thirty-Third IEEE Computer Society International Conference (Cat. No.88CH2539-5)   p.536-8
Publisher: IEEE Comput. Soc. Press, Washington, DC, USA
Publication Date: 1988   Country of Publication: USA   xvi+549 pp.
ISBN: 0 8186 0828 5
U.S. Copyright Clearance Center Code: CH2539-5/88/0000-0536$01.00
Conference Sponsor: IEEE
Conference Date: 29 Feb.-3 March 1988   Conference Location: San Francisco, CA, USA
Language: English   Document Type: Conference Paper (PA)
Treatment: Practical (P); Product Review (R)
Abstract: The development of an interface system that captures, records, and renders to the movement of the human body is reported. Sensors on the DataSuit, a garment covering the body from neck to ankles, register the position and orientation of the joints of the body. An absolute positioning system tracks the movement of the individual in six degrees of freedom within the room is reported. Applications of the DataSuit include use as a user input device for teleoperation, telepresence, human performance modeling, and animation. (6 Refs)
Descriptors: man-machine systems; position control; position measurement; telecontrol equipment; user interfaces
Identifiers: human body movement; user interface devices; virtual environment; DataGlove; DataSuit; absolute positioning system; six degrees of freedom; user input device; teleoperation
Class Codes: C3120C (Spatial variables); C3250 (Telecontrol and telemetering components); C5540B (Interactive-input devices)

1/5/14   (Item 14 from file: 2)
02895512   INSPEC Abstract Number: C87035319
Title: Expert system architecture for battle management
Author(s): Entner, R.S.; Tosh, D.E.
Conference Title: Expert Systems in Government Symposium (Cat. No.86CH2349-9)   p.16-21
Publisher: IEEE Comput. Soc. Press, Washington, DC, USA

Publication Date: 1986   Country of Publication: USA   xiii+466 pp.
ISBN: 0 8186 0738 6
U.S. Copyright Clearance Center Code: CH2349-9/86/0000-0016$01.00
Conference Sponsor: IEEE; AIAA
Conference Date: 22-24 Oct. 1986   Conference Location: McLean, VA, USA
Language: English   Document Type: Conference Paper (PA)
Treatment: Applications (A); General, Review (G); Practical (P)
Abstract: The authors address the requirements for battle management
computing architectures for use in next-generation military systems. These
systems will use combinations of computers, including scalar, vector,
numeric and symbolic processors arranged as distributed multiprocessors and
in parallel processing arrays. A notational approach is presented for
constructing an open, virtual environment for battle management.   (0 Refs)
  Descriptors: decision support systems; distributed processing; expert
systems; military computing; military systems; multiprocessing systems
  Identifiers: virtual network operating system; command and control
systems; battle management computing architectures; military systems;
distributed multiprocessors; parallel processing arrays; virtual
environment
  Class Codes: C5220 (Computer architecture); C5440 (Multiprocessor
systems and techniques); C5620 (Computer networks and techniques); C7150
(Military)

1/5/15   (Item 15 from file: 2)
02735359   INSPEC Abstract Number: C86049541
 Title: A dynamic approach to the robotic design cycle
  Author(s): Fitzhorn, P.A.; Troxell, W.O.
  Author Affiliation: Dept. of Mech. Eng., Colorado State Univ., Ft.
Collins, CO, USA
  Conference Title: Proceedings 1986 IEEE International Conference on
Robotics and Automation (Cat. No.86CH2282-2)   p.353-8 vol.1
  Publisher: IEEE Comput. Soc. Press, Washington, DC, USA
  Publication   Date: 1986   Country   of   Publication: USA   3 vol.
xxxvi+2051 pp.
  ISBN: 0 8186 0695 9
  U.S. Copyright Clearance Center Code: CH2282-2/86/0000-0353$01.00
  Conference Sponsor: IEEE
  Conference Date: 7-10 April 1986   Conference Location: San Francisco,
CA, USA
  Language: English   Document Type: Conference Paper (PA)
  Treatment: Applications (A)
  Abstract: The   use of dynamic, high-performance computer graphics
equipment significantly enhances the capabilities of the engineer in the
design and analysis of robotic mechanisms. The authors discuss how these
enhancements   should be making an impact on the engineering design
methodology   for   robotic   manipulators. They show that the use of
high-performance dynamic graphics systems can help to alleviate design
problems by providing the capability to model robots of interest and
visually analyze their motion relative to the appropriate surroundings.
This virtual environment allows the design engineer to interact with
conceptual models of 3D objects in a dynamic, virtual 3D world.   (7 Refs)
  Descriptors: computer graphics; control system CAD; digital simulation;
robots
  Identifiers: CAD; robotic design cycle; computer graphics; engineering
design methodology; robotic manipulators; dynamic graphics systems; virtual
environment; conceptual models
  Class Codes: C3390 (Robotics); C6130B (Graphics techniques); C7420 (

Control engineering)

1/5/16   (Item 16 from file: 2)
02696885   INSPEC Abstract Number: C86039777
   Title: Hierarchy of robot programming languages and definitions of the
semantics of chosen instructions
   Author(s): Zielinski, C.
   Journal: Archiwum Automatyki i Telemechanika   vol.30, no.3-4   p.
387-405
   Publication Date: 1985   Country of Publication: Poland
   CODEN: AATMAV   ISSN: 0004-072X
   Language: Polish   Document Type: Journal Paper (JP)
   Treatment: Theoretical (T)
   Abstract: Presents a formal method for defining the semantics of robot
language   instructions.   Due to the use of the concept of virtual
environment, the method is independent of the type of robot as well as of
the level of the language. Four levels of robot programming languages are
considered to exist.   Moreover, the languages considered are divided into
two classes: point to point languages and continuous path languages. The
paper presents some examples illustrating how the semantics of robot
language instructions are defined for languages of different type and
level. (12 Refs)
   Descriptors: programming languages; programming theory; robots
   Identifiers: robot programming languages; semantics; robot language
instructions; virtual environment; point to point languages; continuous
path languages
   Class Codes: C4240   (Programming and algorithm theory); C6140   (
Programming languages)

1/5/17   (Item 17 from file: 2)
02661805   INSPEC Abstract Number: C86029982
   Title: Use of main storage as a fast access paging device
   Journal: IBM Technical Disclosure Bulletin   vol.28, no.5   p.1957-62
   Publication Date: Oct. 1985   Country of Publication: USA
   CODEN: IBMTAA   ISSN: 0018-8689
   Language: English   Document Type: Journal Paper (JP)
   Treatment: Applications (A); New Developments (N); Practical (P)
   Abstract: In a virtual environment, fast access magnetic media are
required for paging to get an acceptable level of performance. (0 Refs)
   Descriptors: virtual storage
   Identifiers: main storage usage; virtual storage; fast access paging
device; virtual environment; fast access magnetic media; performance
   Class Codes: C6120   (File organisation)

1/5/18   (Item 18 from file: 2)
02619187   INSPEC Abstract Number: C86019274
   Title: Whither VM?
   Author(s): Kutnick, D.
   Journal: Datamation   vol.31, no.23   p.72-8
   Publication Date: 1 Dec. 1985   Country of Publication: USA
   CODEN: DTMNAT   ISSN: 0011-6963
   Language: English   Document Type: Journal Paper (JP)
   Treatment: General, Review (G)
   Abstract: IBM's Virtual Machine operating system promises to take on
strategic importance for mainframes and minis. The major reason for VM's
increasing popularity in the IBM environment is its versatility. It is
IBM's only extensible operating system-capable of running on 3090s all the

way down to the AI/370. In many ways-its user-friendly facilities and its
interactivity, for   instance-VM is similar   to the better minicomputer
operating systems such as DEC's VMS for VAX. Moreover, VM's virtual
environment can support other operating systems as guests-MVS, DOS, VS/1,
Unix, and (in the near future) PC/DOS-to enable multiple OS coexistence, or
to facilitate OS migration (e.g. from DOS to MVS). Because it is highly
interactive, and can support multiple users in a timesharing environment,
VM is IBM's primary OS for technical environments (scientific, engineering,
R&D), and its CMS facility is utilized frequently for program development
(even where actual execution is under MVS/TSO). IBM's internal developers
make extensive use of VM.   (0 Refs)
   Descriptors: IBM computers; operating systems (computers); virtual
machines
   Identifiers: Virtual Machine operating system; mainframes; IBM
environment; minicomputer operating systems; virtual environment; DOS; MVS;
CMS facility
   Class Codes: C6150J (Operating systems)

   1/5/19   (Item 19 from file: 2)
02111480   INSPEC Abstract Number: B83051482, C83036137
   Title: The Interactive Movie Map: surrogate travel with the aid of dynamic
aerial overviews
   Author(s): Mohl, R.
   Author Affiliation: Architecture Machine Group, MIT, Cambridge, MA, USA
   Conference Title: Midcon/80 Conference Record   p.10/5/1-7
   Publisher: Electron. Conventions, El Segundo, CA, USA
   Publication Date: 1980   Country of Publication: USA   902 pp.
   Conference Date: 4-6 Nov. 1980   Conference Location: Dallas, TX, USA
   Language: English   Document Type: Conference Paper (PA)
   Treatment: Applications (A)
   Abstract: A working system for movement through the space of a virtual
environment under full interactive computer control is presented. The
purpose is to enable users to learn about unfamiliar locales by
'travelling' around at will through sequences of photographic footage and
'helicoptering' above personalized reference maps and aerial photos. The
visual material is stored on optical video disc and supplemented with run
time generated computer graphics.   (4 Refs)
   Descriptors: computer aided instruction; computerised control;
interactive systems; video and audio discs
   Identifiers: aerial photographs; Interactive Movie Map; surrogate travel;
dynamic aerial overviews; virtual environment; interactive computer control
; photographic footage; reference maps; optical video disc; run time
generated computer graphics
   Class Codes: B6430H (Video recording); B6430J (Applications of television
systems); C3370P (Video and sound recording); C5540 (Terminals and graphic
displays); C7810C (Computer-aided instruction)

   1/5/20   (Item 20 from file: 2)
02046950   INSPEC Abstract Number: C83021633
   Title: Planning for software tool implementation: experience with
Schemacode
   Author(s): Robillard, P.N.; Plamondon, R.
   Author Affiliation: Ecole Polytech., Montreal, Que., Canada
   Conference Title: AFIPS Conference Proceedings. Vol.51. 1982 National
Computer Conference   p.749-57
   Editor(s): Morgan, H.L.
   Publisher: AFIPS Press, Arlington, VA, USA

Publication Date: 1982   Country of Publication: USA   xi+843 pp.
Conference Date: 7-10 June 1982   Conference Location: Houston, TX, USA
Language: English   Document Type: Conference Paper (PA)
Treatment: Applications (A)

Abstract: The interactive tool called Schemacode assists users in the development, documentation, and structured coding of programs. Its unique property of word-graphic type of communication can be of great help during the main phase of program development: defining the control structure of the program at different levels of refinement. A Schematic Pseudocode which represents   the   control   skeleton   of   the   program constitutes the very-high-level language input. Construction of the schematic structure and its translation into an appropriate language are the two main functions of Schemacode.   These transformations involve editing, formatting, cross referencing, and structure checking. The use of a formal language appears only at the end of the development, after the logic of the problem has been solved. A real advantage provided by Schemacode is that every program developed has a unique up-to-date documentation and listing. However, modest changes are made in the way programming is done. An integration plan is specifically designed to minimize disturbances in the work milieu where Schemacode is to be implemented and is thus effected in three phases: creation first of a virtual environment, then of linked environment, and finally of an integrated environment. The virtual environment promotes the introduction of the methodology, the linked environment favors an interactive process for learning about the tool, and the integrated environment leads the new users to autonomous control of Schemacode. (13 Refs)

 Descriptors: program processors; software engineering; text editing
 Identifiers: text editing; software engineering; program processors;
software tool implementation; Schemacode; development; documentation;
structured coding; control structure; very-high-level language input;
editing; formatting; cross referencing; structure checking; formal language
; programming; virtual environment; linked environment; integrated
environment
 Class Codes: C6150C (Compilers, interpreters and other processors)

 1/5/21   (Item 21 from file: 2)
00972734   INSPEC Abstract Number: C76027065
 Title: Toward the understandability of an operating system
 Author(s): Varney, R.C.
 Author Affiliation: Bell Labs., Holmdel, NJ, USA
 Journal: Computer Journal   vol.19, no.3   p.213-15
 Publication Date: Aug. 1976   Country of Publication: UK
 CODEN: CMPJA6   ISSN: 0010-4620
 Language: English   Document Type: Journal Paper (JP)
 Treatment: Practical (P)

Abstract: Design considerations are presented for the construction of an operating system. (This approach emphasises the need to understand the interrelationships among all operating system components to facilitate the inevitable growth and development of a useful system.) The concept of a process and a resource are defined in such a way that a resource-to-process concept is developed, which is later used to provide an 'individualised' virtual environment for a process. Terminology is introduced to distinguish between so-called type S and type M resources, which must be treated differently for resource sharing. The levels of abstraction are described for the tree structured operating system that evolved from the design considerations. Within the tree, resource sharing is allowed and controlled by a communication language and so-called resource tables. Since the system

was designed for use on a PDP 11/45, the basic components of its tree are given. It is then suggested that the tree presented is, in fact, a basic framework upon which different specific operating systems may be built. (10 Refs)
   Descriptors: operating systems (computers)
   Identifiers: operating system; virtual environment; resource sharing; tree; resource tables; PDP 11/45; type S resources; design; type M resources
   Class Codes: C6150J (Operating systems)

   1/5/22   (Item 22 from file: 2)
00423903   INSPEC Abstract Number: C72019118
 Title: Virtual input/output in a virtual environment
   Author(s): Ancilotti, P.; Cavina, R.; Lijtmaer, N.
   Author Affiliation: CNR, Pisa, Italy
   Conference   Title: Proceedings of the 2nd International Computing Symposium   p.302-12
   Publisher: Federazione della Assoc. Sci & Tecniche, Milan, Italy
   Publication Date: 1972   Country of Publication: Italy   xiii+634 pp.
   Conference Sponsor: ACM, Assoc. Italiana Calcolo Automatico; et al
   Conference Date: 12-14 April 1972   Conference Location: Venice, Italy
   Language: English   Document Type: Conference Paper (PA)
   Treatment: Practical (P)
   Abstract: The purpose of this paper is to investigate the possibility of allowing an I/O channel, regarded as a special purpose processor, to execute a program allocated in the user's virtual space. The environment is a multiprogramming-multiaccess system with a virtual memory implemented by paging. The proposed system is outlined, and the extra logical requirements for the channel are pointed out. The most relevant advantages are: I) The process information is treated in the virtual space, homogeneously; II) channel programs and their priorities can be dynamically modified; III) lower system overhead and greater flexibility are achieved.   (13 Refs)
   Descriptors: input-output programs; multiprogramming
   Identifiers: multiprogramming and multiaccess system; virtual input/output; virtual environment; I/O channel; special purpose processor; virtual memory; paging
   Class Codes: C6150J (Operating systems)

   1/5/23   (Item 1 from file: 8)
03414584   E.I. Monthly No: EIM9204-017615
   Title: Virtual environment technology (Invited Paper).
   Author: Zeltzer, David L.
   Corporate Source: Media Lab./MIT, Cambridge, MA, USA
   Conference Title: Extracting Meaning from Complex Data: Processing, Display, Interaction II
   Conference Location: San Jose, CA, USA   Conference Date: 1991 Feb 26-28
   Sponsor: SPIE - Int Soc for Opt Engineering, Bellingham, WA, USA; IS&T Soc for Imaging Science & Technology
   E.I. Conference No.: 15379
   Source: Proceedings of SPIE - The International Society for Optical Engineering v 1459. Publ by Int Soc for Optical Engineering, Bellingham, WA, USA. p 86-86
   Publication Year: 1991
   CODEN: PSISDG   ISSN: 0277-786X   ISBN: 0-8194-0558-2
   Language: English
   Document Type: PA; (Conference Paper)   Treatment: T; (Theoretical); A; (Applications)

Journal Announcement: 9204
Abstract: Since the late 1960s and early 1970s researchers have been building novel display devices - including head-mounted displays (HMDs) - and a variety of manual input devices, including force input and output. With the advent of powerful graphic workstations, and relatively inexpensive HMDs and glove-like input devices, however, interest in 'virtual environments' seems to be rising exponentially. In this paper the key components of a virtual environment - autonomy, interaction and presence - are described. Autonomy is a qualitative measure of the capability of computational models to act and react to simulated events and stimuli. Interaction measures the degree of access to model parameters at runtime, ranging from batch processing with no interaction to comprehensive, real-time access to all model parameters. Presence is a rough measure of the number and fidelity of available sensory input and output channels. Work on representing and controlling synthetic autonomous agents for virtual environments will be briefly reviewed. Videotaped examples will be shown. 7 Refs.
     Descriptors: *COMPUTER PERIPHERAL EQUIPMENT--*Graphics; COMPUTER GRAPHICS --Interactive
     Identifiers: VIRTUAL ENVIRONMENT; COMPUTATIONAL MODELS; ABSTRACT ONLY
     Classification Codes: 722 (Computer Hardware)
     72 (COMPUTERS & DATA PROCESSING)

     1/5/24   (Item 2 from file: 8)
     03368356   E.I. Monthly No: EIM9201-003356
     Title: Using velocity control to navigate 3D graphical environments. A comarison of three interfaces.
     Author: Ware, Colin; Slipp, Leonard
     Corporate Source: Univ of New Brunswick, Fredericton, NB, Can
     Conference Title: Proceedings of the Human Factors Society 35th Annual Meeting Part 1 (of 2)
     Conference Location: San Francisco, CA, USA   Conference Date: 1991 Sep 2-6
     Sponsor: Bay Area Chapter
     E.I. Conference No.: 15389
     Source: Proceedings of the Human Factors Society v 1. Publ by Human Factors Soc Inc, Santa Monica, CA, USA. p 300-304
     Publication Year: 1991
     CODEN: PHFSDQ   ISSN: 0163-5182
     Language: English
     Document Type: PA; (Conference Paper)   Treatment: T; (Theoretical); X; (Experimental)
     Journal Announcement: 9201
     Abstract: Three velocity control interfaces to three dimensional virtual environments are compared. The interface devices are: a six degree of freedom position sensor, a six degree of freedom isometric joystick, and a conventional mouse in conjunction with a soft control panel displayed on the monitor. In each interface the devices are used to control velocity, and all make use of a quadratic function to map the input to the viewpoint velocity. We use two structured exploration tasks to assess the usability of the different interfaces. In the first task an interviewing technique is used in conjunction with an exploration task which involved examining widely spaced details of the 3D scene. The second task is designed to reveal how well users can interact at different scales using the different devices. Subjects are required to navigate through a tube which varies over four orders of magnitude in size. The results show that subject's behavior is highly constrained by the local size of the tube: they maintained a

constant velocity relative to the local size of the tube. They also showed
differences in the effectiveness of the different devices in determining
traversal rate that the positioning device and the control panel were about
equally effective for fast navigation, and both are better than the
isometric joystick. (Author abstract) 10 Refs.
    Descriptors: *COMPUTER INTERFACES--*Human Factors; COMPUTER GRAPHICS--
Three Dimensional Graphics; COMPUTER PERIPHERAL EQUIPMENT--Mouse; SYSTEMS
SCIENCE AND CYBERNETICS--Man Machine Systems; DISPLAY DEVICES; HUMAN
ENGINEERING--Behavioral Research
    Identifiers: VELOCITY CONTROL; POSITION SENSOR; JOYSTICK; VIRTUAL
ENVIRONMENT
    Classification Codes: 722 (Computer Hardware); 723 (Computer Software);
461 (Biotechnology); 731 (Automatic Control Principles)
    72 (COMPUTERS & DATA PROCESSING); 46 (BIOENGINEERING); 73 (CONTROL
ENGINEERING)

    1/5/25   (Item 3 from file: 8)
    03355098   E.I. Monthly No: EIM9112-066782
    Title: Auditory image processing in a virtual acoustic environment.
    Author: Kulkarni, Abhijit; Colburn, H. Steven
    Corporate Source: Dept of Biomed Eng, Boston Univ, MA, USA
    Conference Title: Proceedings of the 1991 IEEE 17th Annual Northeast
Bioengineering Conference
    Conference Location: Hartford, CT, USA   Conference Date: 1991 Apr 4-5
    Sponsor: IEEE   Engineering in Medicine and Biology Soc; Univ of
Connecticut; Trinity College/Hartford Graduate Cent; Whitaker Foundation;
Trinity College/Hartford Graduate Center; The Whitaker Foundation
    E.I. Conference No.: 15500
    Source: 91 Northeast Bioengineering Conf. Bioengineering, Proceedings of
the Northeast Conference. Publ by IEEE, IEEE Service Center, Piscataway,
NJ, USA (IEEE cat n 91CH2997-5). p 119-120
    Publication Year: 1991
    CODEN: BENYDB   ISBN: 0-7803-0030-0
    Language: English
    Document Type: PA; (Conference Paper)   Treatment: X; (Experimental)
    Journal Announcement: 9112
    Abstract: A system is described that simulates free-field source at
different locations through headphones, and experiments that make use of
that system are discussed. The system makes use of commercially available
components and incorporates automatic compensation for head motion. It also
allows an interactive mode in which the subject modifies the simulated
acoustic environment by changing her/his hand position. Some preliminary
experiments related to the relative importance of several factors that
influence perceptions of auditory image space are reported. 4 Refs.
    Descriptors: *AUDITION; IMAGE PROCESSING; BIOMEDICAL ENGINEERING--
Neurology
    Identifiers: NINTENDO POWER GLOVE; FREE-FIELD SOURCE; HEAD MOTION;
CONVOLVOTRON; IBM-COMPTIBLE PC/AT; VIRTUAL ENVIRONMENT
    Classification Codes: 462 (Medical Engineering & Equipment); 941
(Acoustical & Optical Measuring Instruments); 723 (Computer Software); 461
 (Biotechnology)
    46 (BIOENGINEERING); 94 (INSTRUMENTS & MEASUREMENT); 72 (COMPUTERS &
DATA PROCESSING)
?logoff
        24jun92 17:42:48 User214300 Session B25.3
            $0.25   0.002 Hrs File2
            $17.60   22 Type(s) in Format 5

```
              $17.60  22 Types
     $17.85  Estimated cost File2
              $17.32     0.148 Hrs File8
                  $1.95  3 Type(s) in Format  5
                  $1.95  3 Types
     $19.27  Estimated cost File8
              OneSearch, 2 files,  0.150 Hrs FileOS
      $0.45  TYMNET
     $37.57  Estimated cost this search
     $40.04  Estimated total session cost    0.204 Hrs.
Logoff: level 29.01.05 B  17:42:49
```


Welcome to DIALOG
Dialog level 29.01.05B

Last logoff: 24jun92 17:42:49
Logon file405 24jun92 18:13:31
* * * TEXTLINE is now available. Begin TXTLN or TEXTLINE * * *
SYSTEM:HOME
   411
                    *** DIALOG HOMEBASE Main Menu ***

Enter an option number and press ENTER to view information on any
item listed below; enter a BEGIN command to search in a different
database.

              1   Announcements (new databases, price changes, etc.)
              2   DIALOG HOMEBASE Features
              3   DIALOG Free File of the Month
              4   DIALOG Database Information and Rates
              5   Database Selection (DIALINDEX/OneSearch Categories)
              6   DIALOG Command Descriptions
              7   DIALOG Training Schedules and Seminar Descriptions
              8   DIALOG Services

              9   Begin DIALOG Menus (sm)
             10   Begin DIALOG Business Connection (r)

 Enter an option number or a BEGIN command and press ENTER.
       /H = Help   /L = Logoff   /NOMENU = Command Mode
?
Menu system 5.35E ends.
        24jun92 18:13:47 User214300 Session B26.1
              $0.06   0.004 Hrs FileHomeBase
     $0.06   Estimated cost FileHomeBase
     $0.01   TYMNET
     $0.07   Estimated cost this search
     $0.07   Estimated total session cost   0.004 Hrs.
File 411:DIALINDEX(tm)
sf eecomp
DIALINDEX(tm)
   (Copr. DIALOG Info.Ser.Inc.)

*** DIALINDEX search results display in an abbreviated ***
*** format unless you enter the SET DETAIL ON command. ***
?
   You have 10 files in your file list.
   (To see banners, use SHOW FILES command.)
?s artificial reality
 Your SELECT statement is:
   s artificial reality
           Items   File
          -----   ----
            27   2: INSPEC 2_69-92/9208W1
             3   8: COMPENDEX PLUS_1970-1992/JUN
             3   582: JAPAN TECHNOLOGY _ 1985-1992 MAY

   3 files have one or more items; file list includes 10 files.

?rf
Your last SELECT statement was:
   S ARTIFICIAL REALITY

Ref   Items   File
---   -----   ----
N1   27   2: INSPEC 2_69-92/9208W1
N2   3   8: COMPENDEX PLUS_1970-1992/JUN
N3   3   582: JAPAN TECHNOLOGY _ 1985-1992 MAY
N4   0   6: NTIS_64-92/9207B2
N5   0   92: IHS INTERNATIONAL STANDARDS AND SPECIFICATIONS_
N6   0   103: ENERGY SCIENCE & TECHNOLOGY_1974-9205B1
N7   0   108: AEROSPACE _ 62-92/ISS13
N8   0   144: PASCAL_1973 - 1991 DEC
N9   0   275: COMPUTER DATABASE_83-92/ISSUE24
N10   0   675: COMPUTER ASAP_83-92/ISSUE 24

    3 files have one or more items; file list includes 10 files.

?save temp
Temp SearchSave "TB007" stored
?b n1-n3;exs
        24jun92 18:15:07 User214300 Session B26.2
             $1.49   0.033 Hrs File411
     $1.49 Estimated cost File411
     $0.10 TYMNET
     $1.59 Estimated cost this search
     $1.66 Estimated total session cost   0.037 Hrs.

SYSTEM:OS - DIALOG OneSearch
   File   2:INSPEC 2 69-92/9208W1
          (COPR. IEE 1992)
 **FILE002: Weekly updates and Alerts are now available in INSPEC!
   File   8:COMPENDEX PLUS 1970-1992/JUN
          (COPR. ENGINEERING INFO. INC. 1992)
   File 582:JAPAN TECHNOLOGY   1985-1992 MAY

       Set Items Description
       --- ----- -----------
Executing TB007
       S1   33 ARTIFICIAL REALITY
?t s1/5/1-33

   1/5/1   (Item 1 from file: 2)
04164473   INSPEC Abstract Number: C9207-3390-022
  Title: Sensors and sensing systems in advanced robotics
  Author(s): Tachi, S.
  Author Affiliation: Mech. Eng. Lab., MITI, Ibaraki, Japan
  Conference Title: TRANSDUCERS '91. 1991 International Conference on
Solid-State Sensors and Actuators. Digest of Technical Papers (Cat.
No.91CH2817-5)   p.601-6
  Publisher: IEEE, New York, NY, USA
  Publication Date: 1991   Country of Publication: USA   1089 pp.
  ISBN: 0 87942 585 7
  U.S. Copyright Clearance Center Code: 91CH2817-5/91/0000-0601$01.00
  Conference Sponsor: IEEE; Cerberus; Endress & Hauser; Ford; General
Motors; Hewlett-Packard

Conference Date: 24-27 June 1991   Conference Location: San Francisco,
CA, USA
   Language: English   Document Type: Conference Paper (PA)
   Treatment: General, Review (G)
   Abstract: The 1991 state of sensors and sensing systems in robotics is
considered from the standpoint of the evolution of robots. Also, the
Japanese national robot projects are reviewed with special emphasis on the
large-scale national project 'Advanced Robot Technology' in hazardous
environments. This project is considered to be the key link to the third
generation of robotics. This project was successfully completed at the end
of 1990. Several plans toward the next generation, e.g. space robotics,
micro robotics, robots for natural disaster prevention, and neurorobotics,
are examined. Sensors and sensing systems are expected to play an important
role in the next generation of robotics.   (9 Refs)
   Descriptors: detectors; robots
   Identifiers: artificial reality; fourth generation; robotics; Japanese
national robot projects; hazardous environments; third generation; space
robotics; micro robotics; natural disaster prevention; neurorobotics
   Class Codes: C3390 (Robotics); C3240 (Transducers and sensing devices)

   1/5/2   (Item 2 from file: 2)
   04162526   INSPEC Abstract Number: C9207-6180-046
    Title: Artificial reality and man-machine interface
    Author(s): Hirose, M.
    Journal: Journal of the Institute of Electrical Engineers of Japan
   vol.111, no.10   p.831-4
    Publication Date: Oct. 1991   Country of Publication: Japan
    CODEN: DGZAAW   ISSN: 0020-2878
    Language: Japanese   Document Type: Journal Paper (JP)
    Treatment: Practical (P)
    Abstract: Artificial reality is the technology used to create a certain
   virtual world by presenting computer-aided synthesis information to the
   organs of visual, hearing and tactile sensations of human beings.
   Artificial reality has three elements; presence, interaction and autonomy.
   The first two of the elements belong to the field of human interface, and
   the last one to the field of artificial intelligence. The author describes
   the meanings of 3-dimensional space interface, creation of visual presence
   feelings (head mounted display, etc.), and reality feelings based on the
   senses of hearing and touch.   (5 Refs)
    Descriptors: computer animation; user interfaces
    Identifiers: artificial reality; virtual reality; man-machine interface;
   computer-aided synthesis information; artificial intelligence;
   3-dimensional space interface; visual presence feelings; head mounted
   display; reality feelings
    Class Codes: C6180 (User interfaces); C6130B (Graphics techniques)

   1/5/3   (Item 3 from file: 2)
   04162519   INSPEC Abstract Number: C9207-6180-043
    Title: Concept of fusion which leads to a simpler design of user interface
    Author(s): Moriya, S.
    Journal: Journal of the Institute of Electrical Engineers of Japan
   vol.111, no.10   p.805-8
    Publication Date: Oct. 1991   Country of Publication: Japan
    CODEN: DGZAAW   ISSN: 0020-2878
    Language: Japanese   Document Type: Journal Paper (JP)
    Treatment: Practical (P)
    Abstract: The user interface is used to minimize mismatching between the

machine and the operator, and maximize productivity and the operator's satisfaction and comfort. The author considers the concepts of fusion to be the most important in design of the user interface, and shows three different examples of fusion in designing the user interface; fusion between the input field and output field (pen-based computer, touch screen, artificial reality, etc.), fusion between the human field and machine field, and fusion between different sections (fusion of system sections, media sections, data format sections, input/output channel sections or mode sections). As for the user friendliness of computer systems, there are five factors; flexibility, transparency, ease of use, ease of learning and reliability. (7 Refs)
  Descriptors: user interfaces
  Identifiers: user-friendly; user interface; pen-based computer; touch screen; artificial reality; data format; input/output channel
  Class Codes: C6180 (User interfaces)

  1/5/4   (Item 4 from file: 2)
04155866   INSPEC Abstract Number: C9206-6160Z-020
  Title: A hypermedia information system to manage the activities in a research institute
  Author(s): Allegra, M.; Di Giuseppe, O.; Mangiaracina, S.
  Author Affiliation: Istituto di Tecnologie Didattiche e Formative, CNR, Palermo, Italy
  Conference Title: Human Aspects in Computing. Design and Use of Interactive Systems and Work with Terminals. Proceedings of the Fourth International Conference on Human-Computer Interaction   p.350-6
  Editor(s): Bullinger, H.-J.
  Publisher: Elsevier, Amsterdam, Netherlands
  Publication Date: 1991   Country of Publication: Netherlands   2 vol. (xviii+xii+1367) pp.
  ISBN: 0 444 88775 X
  Conference Sponsor: IFIP; ACM; Eur. Strategic Programme for Res. Dev. Inf. Technol.; et al
  Conference Date: 1-6 Sept. 1991   Conference Location: Stuttgart, Germany
  Language: English   Document Type: Conference Paper (PA)
  Treatment: Practical (P)
  Abstract: Up to today dynamic hypermedia have been used in cooperative writing, collaboration work, on line publishing and authoring courseware. The authors present an example of information systems for managing and supporting activities in a research institute. The kind of information used in an institute is of a different type; furthermore some data have to be frequently updated. The system helps the workers to fill, to update and to have access to information. The authors believe hypermedia is suitable in effectively managing these data and they examine how it can be used to create information systems based on an artificial reality reflecting this kind of organization. They then describe the structure of HyperITDF system and its use in the institute. (10 Refs)
  Descriptors: hypermedia; management information systems
  Identifiers: activity management; hypermedia information system; research institute; dynamic hypermedia; artificial reality; HyperITDF system
  Class Codes: C6160Z (Other DBMS); C7100 (Business and administration)

  1/5/5   (Item 5 from file: 2)
04141466   INSPEC Abstract Number: B9206-6210P-003, C9206-7410F-017
  Title: Application of visual presentation to communications
  Author(s): Kishino, F.

Journal: Systems, Control and Information   vol.36, no.1   p.26-32
Publication Date: Jan. 1992   Country of Publication: Japan
CODEN: SSEJE3   ISSN: 0916-1600
Language: Japanese   Document Type: Journal Paper (JP)
Treatment: Practical (P)
Abstract: The   following   topics   are   discussed;   communication   with
realistic   sensations   (telepresence),   artificial   reality,   intelligent   image
coding, videoteleconferencing, and the human interface.   (22 Refs)
Descriptors: computerised picture processing; encoding; teleconferencing;
videotelephony; visual communication
Identifiers: visual presentation; communications; telepresence;
artificial reality; intelligent image coding; videoteleconferencing; human
interface
Class Codes: B6210P (Teleconferencing); B6210D (Telephony); B6140C (
Optical information and image processing); B6120B (Codes); C7410F (
Communications); C5260B (Computer vision and picture processing)

1/5/6   (Item 6 from file: 2)
04052613   INSPEC Abstract Number: C9202-6180-024
 Title: Interface device for artificial reality
 Author(s): Sato, M.
 Journal: Journal of the Japan Society of Precision Engineering   vol.57,
no.8   p.1343-6
Publication Date: Aug. 1991   Country of Publication: Japan
CODEN: JJPEAD   ISSN: 0912-0289
Language: Japanese   Document Type: Journal Paper (JP)
Treatment: Practical (P)
Abstract: The author discusses artificial reality, virtual space, force
feedback, perception cycle, the interface device, and CAD.   (2 Refs)
Descriptors: CAD; computer graphics; digital simulation; user interfaces
Identifiers: SPIDAR; artificial reality; virtual space; force feedback;
perception cycle; interface device; CAD
Class Codes: C6180   (User interfaces); C6130B (Graphics techniques);
C7400   (Engineering)

1/5/7   (Item 7 from file: 2)
04052612   INSPEC Abstract Number: C9202-6180-023
 Title: Application of artificial reality to manufacturing field
 Author(s): Igoshi, M.
 Journal: Journal of the Japan Society of Precision Engineering   vol.57,
no.8   p.1339-42
Publication Date: Aug. 1991   Country of Publication: Japan
CODEN: JJPEAD   ISSN: 0912-0289
Language: Japanese   Document Type: Journal Paper (JP)
Treatment: Practical (P)
Abstract: The author discusses artificial reality, a virtual factory, a
virtual shop floor, an actual shopfloor, a realism generation device, the
manufacturing field, an environment model, and a product model.   (10 Refs)
Descriptors: computer graphics; digital simulation; manufacturing
computer control; user interfaces
Identifiers: CIM; artificial reality; manufacturing; virtual factory;
virtual shop floor; realism generation device; environment model; product
model
Class Codes: C6180   (User interfaces); C6130B (Graphics techniques);
C7420   (Control engineering); C3355   (Manufacturing processes)

1/5/8   (Item 8 from file: 2)

04052611   INSPEC Abstract Number: B9202-6140C-199, C9202-6180-022
 Title: Artificial reality in facial expressions
  Author(s): Harashima, H.
  Journal: Journal of the Japan Society of Precision Engineering   vol.57,
no.8   p.1335-8
  Publication Date: Aug. 1991   Country of Publication: Japan
  CODEN: JJPEAD   ISSN: 0912-0289
  Language: Japanese   Document Type: Journal Paper (JP)
  Treatment: Practical (P)
  Abstract: The author discusses artificial reality, facial expressions,
intelligent image coding, a facial action coding system, and computer
graphics. (10 Refs)
  Descriptors: computer graphics; computerised picture processing; digital
simulation; encoding; user interfaces
  Identifiers: artificial reality; facial expressions; intelligent image
coding; facial action coding system; computer graphics
  Class Codes: B6140C (Optical information and image processing); B6120B (
Codes); C6180 (User interfaces); C6130B (Graphics techniques); C5260B (
Computer vision and picture processing)

  1/5/9   (Item 9 from file: 2)
04052610   INSPEC Abstract Number: A9203-8732S-002, C9202-6180-021
 Title: Artificial reality with visual effects
  Author(s): Hatada, T.
  Journal: Journal of the Japan Society of Precision Engineering   vol.57,
no.8   p.1330-4
  Publication Date: Aug. 1991   Country of Publication: Japan
  CODEN: JJPEAD   ISSN: 0912-0289
  Language: Japanese   Document Type: Journal Paper (JP)
  Treatment: Practical (P)
  Abstract: The author discusses the sensation of reality, stereoscopy,
depth perception, the visual field, binocular parallax, motion parallax,
wide-field display, and 3D display. (4 Refs)
  Descriptors: computer graphics; digital simulation; user interfaces;
visual perception
  Identifiers: reality sensation; artificial reality; stereoscopy; depth
perception; visual field; binocular parallax; motion parallax; wide-field
display; 3D display
  Class Codes: A8732S (Psychophysics of vision, visual perception,
binocular vision); C6180 (User interfaces); C6130B (Graphics techniques)

  1/5/10   (Item 10 from file: 2)
04052609   INSPEC Abstract Number: C9202-6180-020
 Title: Virtual reality and force display
  Author(s): Iwata, H.
  Journal: Journal of the Japan Society of Precision Engineering   vol.57,
no.8   p.1326-9
  Publication Date: Aug. 1991   Country of Publication: Japan
  CODEN: JJPEAD   ISSN: 0912-0289
  Language: Japanese   Document Type: Journal Paper (JP)
  Treatment: Practical (P)
  Abstract: The author discusses virtual reality, artificial reality, force
feedback, tactile sensors, haptics and interactive graphics. (8 Refs)
  Descriptors: computer graphics; digital simulation; interactive systems;
tactile sensors; telecontrol; user interfaces
  Identifiers: force display; virtual reality; artificial reality; force
feedback; tactile sensors; haptics; interactive graphics

Class Codes: C6180 (User interfaces); C6130B (Graphics techniques);
C7420 (Control engineering); C3250 (Telecontrol and telemetering
components); C3240M (Tactile sensors)

  1/5/11   (Item 11 from file: 2)
04052608   INSPEC Abstract Number: C9202-6180-019
  Title: Tele-existence and artificial reality
  Author(s): Tachi, S.
  Journal: Journal of the Japan Society of Precision Engineering   vol.57,
no.8   p.1321-5
  Publication Date: Aug. 1991   Country of Publication: Japan
  CODEN: JJPEAD   ISSN: 0912-0289
  Language: Japanese   Document Type: Journal Paper (JP)
  Treatment: Practical (P)
  Abstract: The author discusses tele-existence, telepresence, artificial
reality,   virtual   reality,   telerobotics,   a   master-slave   system,   and
teleoperation.   (13 Refs)
  Descriptors: computer graphics; digital simulation; robots; telecontrol;
user interfaces
  Identifiers: artificial reality; tele-existence; telepresence; artificial
reality; virtual reality; telerobotics; master-slave system; teleoperation
  Class Codes: C6180 (User interfaces); C6130B (Graphics techniques);
C7420 (Control engineering); C3250 (Telecontrol and telemetering
components); C3390 (Robotics)

  1/5/12   (Item 12 from file: 2)
04050286   INSPEC Abstract Number: C9201-6180G-028
  Title: Interfacing to virtual reality: modes of interaction with virtual
objects
  Author(s): Purcell, P.
  Author Affiliation: MIT, Media Lab., Cambridge, MA, USA
  Conference Title: Computer Graphics 90. Proceedings of the Conference
p.43-5
  Publisher: Blenheim Online, London, UK
  Publication Date: 1990   Country of Publication: UK   x+386 pp.
  ISBN: 0 86353 253 5
  Conference Date: 6-8 Nov. 1990   Conference Location: London, UK
  Language: English   Document Type: Conference Paper (PA)
  Treatment: Practical (P)
  Abstract: One of the three constituencies of artificial reality is
selected,   namely the human interface issue. An account of some of the work
being undertaken in the Media Laboratory is given. The author comments on
the interdisciplinary nature of the academic programme of the laboratory
and how this influences the character of the resultant interface research.
(6 Refs)
  Descriptors: digital simulation; graphical user interfaces; human factors
  Identifiers: virtual objects; artificial reality; human interface issue;
interdisciplinary nature; academic programme; interface research
  Class Codes: C6180G (Graphical user interfaces); C6130B (Graphics
techniques)

  1/5/13   (Item 13 from file: 2)
04034673   INSPEC Abstract Number: B9201-6210P-007, C9201-6180G-003
  Title: Teleconferencing with realistic sensations
  Author(s): Kishino, F.
  Journal: Journal of the Society of Instrument and Control Engineers
vol.30, no.6   p.485-9

Publication Date: June 1991   Country of Publication: Japan
CODEN: KESEA4   ISSN: 0453-4662
Language: Japanese   Document Type: Journal Paper (JP)
Treatment: General, Review (G)
(12 Refs)
Descriptors: graphical user interfaces; teleconferencing
Identifiers: artificial reality; video teleconferencing; TOCUS; realistic
sensations
   Class Codes: B6210P (Teleconferencing); C6180G (Graphical user interfaces
); C7410F (Communications); C7100   (Business and administration)

   1/5/14   (Item 14 from file: 2)
04034671   INSPEC Abstract Number: C9201-5540B-005
 Title: Force display
 Author(s): Iwata, H.
 Journal: Journal of the Society of Instrument and Control Engineers
vol.30, no.6   p.472-7
   Publication Date: June 1991   Country of Publication: Japan
CODEN: KESEA4   ISSN: 0453-4662
Language: Japanese   Document Type: Journal Paper (JP)
Treatment: General, Review (G)
(10 Refs)
Descriptors: computer animation; force measurement; graphical user
interfaces; interactive devices; interactive systems
Identifiers: force display; artificial reality; haptics; force sense;
input device; interactive graphics; SANDPAPER; personal HOOPS; GROPE
   Class Codes: C5540B (Interactive-input devices); C6180G (Graphical user
interfaces)

   1/5/15   (Item 15 from file: 2)
04034670   INSPEC Abstract Number: C9201-3370L-001
 Title: Tele-existence
 Author(s): Tachi, S.
 Journal: Journal of the Society of Instrument and Control Engineers
vol.30, no.6   p.465-71
   Publication Date: June 1991   Country of Publication: Japan
CODEN: KESEA4   ISSN: 0453-4662
Language: Japanese   Document Type: Journal Paper (JP)
Treatment: General, Review (G)
(13 Refs)
Descriptors: computer animation; graphical user interfaces; telecontrol
Identifiers: tele-existence; tele-presence; artificial reality; virtual
reality; virtual environment; real world; virtual world; tele-reality;
physical world; teleoperated vehicle; teleoperated robot; Naval Ocean
Systems Center
   Class Codes: C3370L (Remote signalling, dispatching and safety devices);
C6180G (Graphical user interfaces); C7420   (Control engineering); C5540B (
Interactive-input devices)

   1/5/16   (Item 16 from file: 2)
04007777   INSPEC Abstract Number: C91071261
 Title: Space interface device for artificial reality-SPIDAR
 Author(s): Sato, M.; Hirata, Y.; Kawarada, H.
 Author Affiliation: Precision & Intelligence Lab., Tokyo Inst. of
Technol., Yokohama, Japan
 Journal: Transactions of the Institute of Electronics, Information and
Communication Engineers D-II   vol.J74D-II, no.7   p.887-94

Publication Date: July 1991   Country of Publication: Japan
CODEN: DTGDE7
Language: Japanese   Document Type: Journal Paper (JP)
Treatment: Experimental (X)

Abstract: To   develop   a   human   interface   for   shape   modeling   of
3-dimensional   objects,   it   is   necessary   to   construct a virtual working
space,   where   one   can manipulate object models directly just like in real
space.   The authors observe the human manipulation process of 3-dimensional
objects and analyse the flows of perceptual information in the process. For
the   realization   of   the   virtual   working   space,   they   propose   a space
interface   device   SPIDAR   (space interface device for artificial reality).
They   demonstrate   two   experiments   to   evaluate the virtual working space
using   SPIDAR   to   confirm   the effect of the sense of force on work in the
virtual space.   (2 Refs)
   Descriptors: interactive devices; telecontrol; user interfaces
   Identifiers: force sense; feedback; artificial reality; human
manipulation process; 3-dimensional objects; perceptual information; space
interface device; SPIDAR
   Class Codes: C5540B (Interactive-input devices); C3250   (Telecontrol and
telemetering components)

   1/5/17   (Item 17 from file: 2)
   03962590   INSPEC Abstract Number: C91059543
   Title: Virtual, interactive literature
   Author(s): Desmarais, N.
   Author Affiliation: Providence Coll., RI, USA
   Journal: CD-Rom Librarian   vol.6, no.6   p.18-20
   Publication Date: June 1991   Country of Publication: USA
   CODEN: CDLIEQ   ISSN: 0893-9934
   Language: English   Document Type: Journal Paper (JP)
   Treatment: Practical (P)
Abstract: Systems designers are working on developing products that will
integrate   a   variety   of   consumer   electronic commodities, such as stereo
systems,   televisions, and computers. These devices will give rise to a new
dimension   in   learning   and   entertainment. One   can   expect   these   two
activities to eventually merge into a new field that some analysts refer to
as   'edutainment.'   Some   people   describe   this   process as 'ninetendizing
information.'   Others   refer   to   it as 'artificial reality,' an oxymoronic
term,   otherwise   known   as   'virtual   reality,'   or   'cyberspace.' Virtual
reality   takes   our   lives into the technology. It suggests that life, like
film,   video,   and   computer   data,   can   be   edited to become 'post human'
radically   reprogrammed   through   artificial   evolution   or   redesigned by
technology. One enters this artificial world by putting on special clothing
wired to a computer. The computer generates sounds and images either of the
real   world   or   of   an   imaginary   one   that appear to the viewer in three
dimensions.   The   author   examines   the   applications   for   this   advanced
simulation   technique   for   ego,   training   pilots,   teaching   surgeons. He
focuses   on   its   uses   in   novels,   plays   and   films   and   the concept of
interactive   literature. The 'reader' would control the action and the plot
would   change   depending   on   the reader's choices of actions. Examples are
given to illustrate these concepts.   (0 Refs)
   Descriptors: artificial intelligence; digital simulation; interactive
systems; literature
   Identifiers: consumer electronic commodities; stereo systems; edutainment
; artificial reality; virtual reality; cyberspace; Virtual reality;
computer data; post human; artificial evolution; artificial world; sounds;
images; real world; advanced simulation technique; training pilots;

surgeons; novels; plays; films; interactive literature
    Class Codes: C7000 (Computer applications); C6170 (Expert systems)

  1/5/18   (Item 18 from file: 2)
03879113   INSPEC Abstract Number: C91036551
  Title: Artificial reality and simulator
    Author(s): Iwata, H.
    Author Affiliation: Inst. of Eng. Mech., Tsukuba Univ., Ibaraki, Japan
    Journal: Journal of the Japan Society for Simulation Technology   vol.9,
no.4   p.238-48
    Publication Date: Dec. 1990   Country of Publication: Japan
    CODEN: SHIMDM   ISSN: 0285-9947
    Language: Japanese   Document Type: Journal Paper (JP)
    Treatment: Practical (P)
    Abstract: Artificial reality is a configuration of a human interface
presenting a computer-generated virtual world to sense organs such as eyes,
ears, skins, and so on. The major objective of artificial reality is to
amplify human intelligence by natural communication between computer and
human being. The paper presents a brief history of artificial reality and
topics of force display and virtual space walking systems. Force display is
a virtual space operation system, combining real-time computer graphics and
force feedback device. The paper describes issues of artificial reality
technology and examples of developed systems. Expected application areas
and future direction are discussed. (10 Refs)
    Descriptors: computer graphics; graphical user interfaces; real-time
systems; simulation
    Identifiers: human interface; computer-generated virtual world; sense
organs; artificial reality; force display; virtual space walking systems;
real-time computer graphics; force feedback device
    Class Codes: C6130B (Graphics techniques)

  1/5/19   (Item 19 from file: 2)
03879112   INSPEC Abstract Number: C91036550
    Title: The real-time computer graphics animation created through analysis
of human movement
    Author(s): Kawabata, M.; Sakamoto, H.
    Author Affiliation: Fuji Television Network, Inc., Tokyo, Japan
    Journal: Journal of the Japan Society for Simulation Technology   vol.9,
no.4   p.227-37
    Publication Date: Dec. 1990   Country of Publication: Japan
    CODEN: SHIMDM   ISSN: 0285-9947
    Language: Japanese   Document Type: Journal Paper (JP)
    Treatment: Practical (P)
    Abstract: Utilizing optical fiber sensors and magnetic sensors,
'DATAGLOVE' and 'DATASUIT' are tools which evaluate wide ranging movements
of the human body under real time. As such, they are receiving much
attention as interfaces for artificial reality. At the exhibition hall,
TEPIA, in Aoyama, Tokyo which has an aim of proliferating the latest in
technology, the 'HARP Exhibition' was held. The theme of this exhibition
was 'ADVANCED INTERFACES', focusing on new interface technology between man
and machines. Utilizing a 'DATASUIT' and 'DATAGLOVE', movements of the
human body are transferred to the computer as numerical data. This
information is displayed, under real time, by a three dimensional CG system
and a picture of animation of the movements displayed. The report focuses
on this system. (2 Refs)
    Descriptors: computer animation; graphical user interfaces; optical
fibres; real-time systems

Identifiers: optical fiber sensors; magnetic sensors; DATAGLOVE; DATASUIT
; human body; real time; artificial reality; HARP Exhibition; interface
technology; numerical data; three dimensional CG system; animation
  Class Codes: C6130B (Graphics techniques); C6180 (User interfaces)

1/5/20   (Item 20 from file: 2)
03838321   INSPEC Abstract Number: C91023947
 Title: Human interface using artificial reality
  Author(s): Takemura, H.; Kishino, F.
  Author Affiliation: ATR Commun. Syst. Res. Labs., Kyoto, Japan
  Journal: Journal of the Institute of Television Engineers of Japan
vol.44, no.8   p.981-5
  Publication Date: Aug. 1990   Country of Publication: Japan
  CODEN: JITJA7   ISSN: 0386-6831
  Language: Japanese   Document Type: Journal Paper (JP)
  Treatment: Practical (P)
  Abstract: Artificial reality reproduces a visionary world by giving
artificial stimulation to the receptor which is generally used to recognize
the state of the outer world. Application to the human interface enables
the equipment's original interface to be offered to users in a quite
different form. It is also possible to carry out new types of
communication, conference and cooperative work by utilizing the visionary
world created as the space commonly possessed by a number of people. This
paper covers the present state of technology and some examples of its
application to the human interface. (13 Refs)
  Descriptors: graphical user interfaces; groupware; human factors;
interactive systems
  Identifiers: artificial reality; visionary world; artificial stimulation;
conference; cooperative work; technology; human interface
  Class Codes: C6180 (User interfaces); C6130B (Graphics techniques);
C0230 (Economic, social and political aspects)

1/5/21   (Item 21 from file: 2)
03791402   INSPEC Abstract Number: C91010885
  Title: Artificial reality with force-feedback: development of desktop
virtual space with compact master manipulator
  Author(s): Iwata, H.
  Author Affiliation: Inst. of Eng. Mech., Tsukuba Univ., Ibaraki, Japan
  Journal: Computer Graphics   vol.24, no.4   p.165-70
  Publication Date: Aug. 1990   Country of Publication: USA
  CODEN: CGRADI   ISSN: 0097-8930
  U.S. Copyright Clearance Center Code: 0097-8930/90/008/0165$00.75
  Conference Title: SIGGRAPH 1990. 17th Annual ACM Conference on Computer
Graphics and Interactive Techniques
  Conference Sponsor: ACM; IEEE
  Conference Date: 6-10 Aug. 1990   Conference Location: Dallas, TX, USA
  Language: English   Document Type: Conference Paper (PA); Journal Paper
(JP)
  Treatment: Practical (P)
  Abstract: A configuration for a human interface for artificial reality is
discussed. The paper describes a method of implementing force-feedback in a
virtual space manipulation system. The system is composed of two
subsystems, a real-time graphic display system and a tactile input device
with reaction force generator. A specialized graphics computer (Stardent
TITAN) provides a real-time image of the virtual space. A 9
degree-of-freedom manipulator has been developed as a tactile input device.
The manipulator applies reaction forces to the fingers and palm of the

operator. The generated forces are calculated from a solid model of the
virtual space. The performance of the system is exemplified in manipulation
of virtual solid objects such as a mockup for industrial design and a 3D
animated character.   (11 Refs)
   Descriptors: graphical user interfaces; interactive devices; real-time
systems; solid modelling; user interfaces
   Identifiers: force-feedback; desktop virtual space; compact master
manipulator; human interface; artificial reality; real-time graphic display
system; tactile input device; reaction force generator; graphics computer;
Stardent TITAN; solid model; virtual solid objects; industrial design; 3D
animated character
   Class Codes: C6130B (Graphics techniques); C5540B (Interactive-input
devices); C6180 (User interfaces)

1/5/22   (Item 22 from file: 2)
03786592   INSPEC Abstract Number: B91006183, C91006796
 Title: Impact of new technologies assessed by defense agency
   Author(s): Arbogast, G.W.; Coviello, G.J.
   Journal: Signal   vol.44, no.12   p.59-62
   Publication Date: Aug. 1990   Country of Publication: USA
   CODEN: SGNAAZ   ISSN: 0037-4938
   Language: English   Document Type: Journal Paper (JP)
   Treatment: Applications (A); Practical (P)
   Abstract: An experimental display system that combines three-dimensional
graphics and sound to create an artificial reality is being explored by the
Defense Communications Agency. Known as a virtual work station, this
development is considered a major technical step in three-dimensional
computerized image processing and is expected to evolve as a general
purpose human information device. The agency's three-pronged approach to
technology assessment involves identifying critical technologies that show
prototyping promise by the mid-1990s; developing specific technology
insertion projects for the agency's users; and continuing involvement with
the military research and development community. (0 Refs)
   Descriptors: aerospace simulation; computer graphics; computerised
picture processing; engineering workstations; military computing; research
and development management
   Identifiers: display system; three-dimensional graphics; sound;
artificial reality; Defense Communications Agency; virtual work station;
technology assessment; prototyping; technology insertion projects; military
   Class Codes: B7620 (Aerospace test facilities and simulation); B7260 (
Display technology and systems); B7930 (Military communications); C7460 (
Aerospace engineering); C5540 (Terminals and graphic displays); C6130B (
Graphics techniques)

1/5/23   (Item 23 from file: 2)
03766687   INSPEC Abstract Number: C91004337
 Title: A 3D interactive physically-based micro world
   Author(s): Waters, K.; Wang, S.
   Author Affiliation: Schlumberger Lab. for Comput. Sci., Austin, TX, USA
   Journal: Proceedings of the SPIE - The International Society for Optical
Engineering   vol.1259   p.91-8
   Publication Date: 1990   Country of Publication: USA
   CODEN: PSISDG   ISSN: 0277-786X
   Conference Title: Extracting Meaning from Complex Data: Processing,
Display, Interaction
   Conference Sponsor: SPIE; Soc. Imaging Sci. Technol
   Conference Date: 14-16 Feb. 1990   Conference Location: Santa Clara, CA,

USA
   Language: English   Document Type: Conference Paper (PA); Journal Paper
(JP)
   Treatment: Practical (P)

   Abstract: Describes an   approach to synthetic three-dimensional object
manipulation using three different haptic I/O devices in a virtual
workspace on a graphics superworkstation. The devices involve the operator
in   unique   modes   of   interaction   that require positioning a six
degree-of-freedom sensor, applying torques to a static ball, or creating
interpreted hand gestures. With these devices, the user can select, rotate
and   deposit   synthetic virtual objects in the micro world. The micro world
is an 'artificial reality' in which elementary physical forces of gravity,
volume preservation, collision, and external user input may be applied. The
techniques developed overcome some of the difficulties experienced with
two-dimensional   input   devices   in a three-dimensional space. Furthermore,
the ability of the user to continuously modify physical constraints while
observing the results in real-time facilitates data interpretation tasks.
(15 Refs)
   Descriptors: computer graphics; computer peripheral equipment;
interactive systems; real-time systems; user interfaces
   Identifiers: interaction modes; 3 Space; Spaceball; DataGlove; sensor
positioning; real time observation; interactive physically-based micro
world; synthetic three-dimensional object manipulation; haptic I/O devices;
virtual workspace; graphics superworkstation; torques; interpreted hand
gestures; virtual objects; artificial reality; physical forces; gravity;
volume preservation; collision; external user input; physical constraints;
data interpretation tasks
   Class Codes: C6130B (Graphics techniques); C5540B (Interactive-input
devices); C6180   (User interfaces)

   1/5/24   (Item 24 from file: 2)
03700468   INSPEC Abstract Number: D90002380
 Title: The ultimate interface (virtual-worlds technology)
 Author(s): Leibs, S.
 Journal: InformationWEEK   no.276   p.46-8
 Publication Date: 25 June 1990   Country of Publication: USA
 CODEN: INFWE4   ISSN: 8750-6874
 Language: English   Document Type: Journal Paper (JP)
 Treatment: Practical (P)
Abstract: At a handful of corporate and university research labs,
hardware   and   software   engineers   are   teaming   up with urban planners,
psychologists,   and other 'soft science' experts to develop a suite of
technologies known as 'artificial reality', 'virtual reality', or 'virtual
worlds'. Broadly stated, their goal is to develop new ways of working with
computers that are far more intuitive and powerful than today's common
metaphor of the two dimensional desktop. They are developing systems in
which computer users rely on special equipment, including goggles, gloves,
and even entire suits to manipulate objects and otherwise work and play in
a virtual world, a world that, depending on the specific application, may
or may not resemble what most of us think of as reality. While these
developers still face fundamental problems in bringing virtual technology
into widespread use, their efforts have already found several niche
markets. And, they say, virtual reality's potential is so great that it
will   not   only   find applications in business environments but in
entertainment,   the   arts, and a host of consumer applications as well.   (0
Refs)
   Descriptors: human factors; user interfaces

Identifiers: man machine interface; three dimensional interface;
artificial reality; virtual reality; virtual worlds; computers; goggles;
gloves; suits; virtual technology; business environments; entertainment;
arts; consumer applications
  Class Codes: D5030 (Printers and other peripherals); D1040 (Human
aspects)

  1/5/25   (Item 25 from file: 2)
  03625008   INSPEC Abstract Number: C90035948
  Title: An intelligent information system for documentation of a building
    Author(s): Valcher, P.; Locatelli, M.; Bianchi, D.; Morandi, R.
    Author Affiliation: Dept. of Inf. Sci., Milan Univ., Italy
    Conference Title: Quarto Convegno su: Text Processing (Fourth Meeting on
Text Processing)   p.201-9
    Publisher: A.I.C.A, Milan, Italy
    Publication Date: 1989   Country of Publication: Italy   349 pp.
    Conference Date: 12-13 Dec. 1989   Conference Location: Milan, Italy
    Language: Italian   Document Type: Conference Paper (PA)
    Treatment: Practical (P)
    Abstract: An analysis is given of the relationships between the concepts
of artificial reality and intelligent information systems and leads to a
description of software for describing a real organisation, such as a
department. The development uses a Hypercard packet. Notes are given on
somewhat similar parallel developments. The methodology of the approach
used is presented: i.e., form a data structure with all the data to handle
and maintain the main details of a complete building. Putting the system
into operation is described using a model made in Hypercard. The result is
successful and it is hoped to make the system portable in the future. (10
  Refs)
    Descriptors: administrative data processing; building; hypermedia;
knowledge based systems
    Identifiers: building documentation; artificial reality; intelligent
information systems; real organisation; Hypercard packet; data structure;
complete building
    Class Codes: C7190 (Other fields); C7440 (Civil and mechanical
engineering); C6160Z (Other DBMS); C6170 (Expert systems)

  1/5/26   (Item 26 from file: 2)
  03595228   INSPEC Abstract Number: C90025953
  Title: Telerobotics and tele-existence
    Author(s): Tachi, S.
    Journal: Journal of the Society of Instrument and Control Engineers
vol.28, no.12   p.1059-64
    Publication Date: Dec. 1989   Country of Publication: Japan
    CODEN: KESEA4   ISSN: 0453-4662
    Language: Japanese   Document Type: Journal Paper (JP)
    Treatment: Practical (P)
    Abstract: The   following   topics   are   discussed;   telerobotics,
tele-existence, telepresence, artificial reality, and virtual environment
display. The work of various government agencies is discussed. (16 Refs)
    Descriptors: aerospace computer control; robots; space vehicles;
telecontrol
    Identifiers: tele-existence; telerobotics; telepresence; artificial
reality; virtual environment display; government agencies
    Class Codes: C3360L (Aerospace systems); C7420 (Control engineering);
C7460 (Aerospace engineering); C3390 (Robotics); C3250 (Telecontrol and
telemetering components)

1/5/27   (Item 27 from file: 2)
03526424   INSPEC Abstract Number: C90009680
   Title: Information   Detective: a   workstation   for   exploring   three
dimensional information space
   Author(s): Kojima, K.
   Journal: SIGCHI Bulletin   vol.21, no.1   p.78-9
   Publication Date: July 1989   Country of Publication: USA
   CODEN: SGBUD4   ISSN: 0736-6906
   Language: English   Document Type: Journal Paper (JP)
   Treatment: Practical (P)
   Abstract: Artificial   reality is used to simulate two different kinds of
space. One is the physical world and the other is a conceptual data model.
A head mounted display can simulate the former. The authors propose a
system,   Information   Detective,   to   simulate   the   latter.   Information
Detective   is   a   workstation   for   browsing complex information spaces. It
consists of a small flat display and two tracking sensors. It behaves like
a magnifying glass in three dimensional space and can show object details
in a natural way. It is being developed to keep users from losing
themselves in large and complex information spaces.   (6 Refs)
   Descriptors: computer graphic equipment; data structures; user interfaces
; virtual machines; workstations
   Identifiers: artificial reality; three dimensional information space;
physical world; conceptual data model; head mounted display; Information
Detective; workstation; complex information spaces; small flat display;
tracking sensors; magnifying glass
   Class Codes: C7430 (Computer engineering); C5540 (Terminals and graphic
displays); C5430 (Microcomputers); C6120 (File organisation); C6180 (
User interfaces)

1/5/28   (Item 1 from file: 8)
03084215   E.I. Monthly No: EI9107075834
   Title: Impact of AI technology within the HVAC industry.
   Author: Culp, Charles; Haberl, Jeff; Norford, Les; Brothers, Peter; Hall,
John
   Corporate Source: Honeywell Inc, Arlington Heights, IL, USA
   Source: ASHRAE Journal v 32 n 12 Dec 1990 6p
   Publication Year: 1990
   CODEN: ASHRAA   ISSN: 0001-2491
   Language: English
   Document Type: JA; (Journal Article)   Treatment: G; (General Review)
   Journal Announcement: 9107
   Abstract: As it develops, artificial intelligence technology will have an
increasing impact on building operations. This article focuses on: design;
commissioning; diagnostics, operations and maintenance; training; and
building and data management. Technologies that will affect these areas
include expert systems, neural networks, intelligent computer aided design
(ICAD), fuzzy logic and artificial reality. Expert systems are computer
programs that mimic a human expert. Neural networks are computer programs
that are designed to operate the way neurons operate in humans. Fuzzy logic
is useful when the correct response is somewhere between a yes or a no
because it can represent concepts such as almost, all, most and others.
Artificial reality is a technology that allows users to project themselves
into a computer generated 3-D simulation. 16 Refs.
   Descriptors: *ARTIFICIAL INTELLIGENCE; BUILDINGS--Climate Control; AIR
CONDITIONING; HEATING; EXPERT SYSTEMS; NEURAL NETWORKS
   Identifiers: HVAC INDUSTRY; ICAD; FUZZY LOGIC; ARTIFICIAL REALITY

Classification Codes: 723 (Computer Software); 402 (Buildings & Towers)
; 643 (Space Heating & Air Conditioning)
   72 (COMPUTERS & DATA PROCESSING); 40 (CIVIL ENGINEERING); 64 (HEAT &
THERMODYNAMICS)

   1/5/29   (Item 2 from file: 8)
   03035440   E.I. Monthly No: EIM9103-009356
   Title: Artificial   reality with force-feedback. Development of desktop
virtual space with compact master maniupulator.
   Author: Iwata, Hiroo
   Corporate Source: Univ of Tsukuba, Tsukuba, Jpn
   Conference Title: 17th Annual ACM Conference on Computer Graphics and
Interactive Techniques - SIGGRAPH '90
   Conference Location: Dallas, TX, USA   Conference Date: 1990 Aug 6
   E.I. Conference No.: 13813
   Source: Computer Graphics (ACM) v 24 n 4 Aug 1990. Publ by ACM, New York,
NY, USA. p 165-170
   Publication Year: 1990
   CODEN: CPGPBZ   ISSN: 0097-8930
   Language: English
   Document Type: JA; (Journal Article)   Treatment: T; (Theoretical); A;
(Applications)
   Journal Announcement: 9103
   Abstract: A new configuration of Human Interface for 'artificial reality'
is discussed. This paper describes a method of implementing force-feedback
in a virtual space manipulation system. The system is composed of two
subsystems, a real-time graphic display system and a tactile input device
with reaction force generator. A specialized graphics computer (Stardent
TITAN) provides a real-time image of the virtual space. A 9
degree-of-freedom manipulator has been developed as a tactile input device.
The manipulator applies reaction forces to the fingers and palm of the
operator. The generated forces are calculated from a solid model of the
virtual space. The performance of the system is exemplified in manipulation
of virtual solid objects such as a mockup for industrial design and a 3D
animated character. (Author abstract) 11 Refs.
   Descriptors: *COMPUTER GRAPHICS--*Interactive; COMPUTER AIDED DESIGN;
COMPUTER AIDED ENGINEERING; COMPUTER SYSTEMS, DIGITAL--Real Time Operation;
ROBOTS, INDUSTRIAL--Manipulators
   Identifiers: ARTIFICIAL REALITY; REAL TIME GRAPHICS
   Classification Codes: 723 (Computer Software); 722 (Computer Hardware);
731 (Automatic Control Principles)
   72 (COMPUTERS & DATA PROCESSING); 73 (CONTROL ENGINEERING)

   1/5/30   (Item 3 from file: 8)
   01850402   E.I. Monthly No: EIM8501-004867
   Title: ARTIFICIAL REALITY ABSTRACTS.
   Author: Krueger, Myron W.
   Corporate Source: Univ of Connecticut, Dep of Electrical Engineering &
Computer Science, Storrs, CT, USA
   Conference Title: 1984: Challenges to an Information Society, Proceedings
of the 47th ASIS Annual Meeting.
   Conference Location: Philadelphia, PA, USA   Conference Date: 1984 Oct
21-25
   Sponsor: ASIS, Washington, DC, USA
   E.I. Conference No.: 05587
   Source: Proceedings of the ASIS Annual Meeting 47th v 21 1984. Publ for
ASIS by Knowledge Industry Publ Inc, White Plains, NY, USA p 16

Publication Year: 1984
CODEN: PAISDQ   ISSN: 0044-7870   ISBN: 0-86729-115-X
Language: English
Document Type: PA; (Conference Paper)
Journal Announcement: 8501
Abstract: The encounter between humanity and machines is considered. The role of computers in participant's action in a Responsive Environment is discussed that creates images and interactions.
Descriptors: *SYSTEMS SCIENCE AND CYBERNETICS--*Man Machine Systems; COMPUTER SYSTEMS, DIGITAL--Interactive Operation; CONTROL SYSTEMS--Computer Applications
Identifiers: RESPONSIVE ENVIRONMENT; PARTICIPANTS' ACTIONS; ARTIFICIAL REALITY; COMPUTER-BASED ART FORM; CONTINUOUS THEORIES CONCEPTUALIZATION; ABSTRACT ONLY
Classification Codes: 731   (Automatic Control Principles); 723   (Computer Software)
73 (CONTROL ENGINEERING); 72   (COMPUTERS & DATA PROCESSING)

1/5/31   (Item 1 from file: 582)
00165617
TITLE: Ishikawajima-Harima Heavy Industries Co.'s second generation space
    robot   experiment   facility   using   artificial   reality   and voice
    recognition system
SOURCE: Nikkei Mechanical, Iss. 340, Pages: 58-59, January 7, 1991
PUBLICATION YEAR: 1991
COMPANY NAME: Ishikawajima-Harima Heavy Industries Co., Ltd.
LANGUAGE: Japanese
ARTICLE TYPE: Application
ABSTRACT: Ishikawajima-Harima Heavy Industries Co. has established at its
    technical   headquarters   a remotely   operated second generation robotic
    simulation   test facility which operates in accordance with instructions
    received from   earth. It is equipped to conduct operational experiments
    using combined facilities and the orbital replacement unit which links
    the   test   facilities   and the main station with the space station. The
    test facilities are comprised of a head mounted display and data globe
    for   artificial   reality,   the   voice   recognition   equipment,   a
    charge-coupled device camera,   an   industrial robot,   and a personal
    computer for control.
DESCRIPTOR(S):   space   stations;   robots;   artificial reality;   voice
    signals;   microcomputers;   charge-coupled devices;   cameras
SECTION HEADING(S): Robotics and Control - Robotics
REFERENCE NUMBER(S):   C135902

1/5/32   (Item 2 from file: 582)
00162708
TITLE: Japan Technology Transfer Association sets a committee for
    artificial   reality   (AR) and tele-existence research to promote
    cooperative   efforts   among   industry,   government,   and academic
    institutions
SOURCE: Nikkei Mechanical, Iss. 337, Pages: 85, November 26, 1990
PUBLICATION YEAR: 1990
COMPANY NAME: MITI;   Japan Technology Transfer Association
LANGUAGE: Japanese
ARTICLE TYPE: General Review
ABSTRACT: Created through the auspices of MITI and drawing on the
    participation of 52 top companies., this committee on artificial reality
    and tele-existence research held its first research meeting on 19

October 1990. Artificial reality produces stereoimage space in the
operator's environment by three-dimensional computer graphics to create
an interface which has the advantage of visual and ordinary finger and
hand movements.
DESCRIPTOR(S):   artificial reality;   computer graphics;   man-machine
    interface
SECTION HEADING(S): Computing Methodologies - Graphics
REFERENCE NUMBER(S): C134073

1/5/33   (Item 3 from file: 582)
00157181
TITLE: ''Man-made realities" created by three-dimensional CG - Operating
    imaginary spaces by movement of head and hands
AUTHOR(S): Hattori, Shinichiro
SOURCE: Nikkei Mechanical, Iss. 333, Pages: 42-50, October 1, 1990
PUBLICATION YEAR: 1990
LANGUAGE: Japanese
ARTICLE TYPE: Application
ABSTRACT: Research is proceeding on artificial reality in order to
    produce easily-used interfaces using stereo images in three-dimensional
    computer graphics. In three-dimensional computer graphics it is possible
    to freely manipulate computer graphic objects. Development has begun on
    systems to supplement the display of systems of simulated experiences
    and assembly operations for showroom use by using these methods. (1
    Ref.)
DESCRIPTOR(S):   computer graphics;   artificial reality;   man-machine
    interface;   research
SECTION HEADING(S): Computing Methodologies - Graphics
REFERENCE NUMBER(S): C130133
?logoff
        24jun92 18:24:15 User214300 Session B26.3
            $20.79   0.165 Hrs File2
               $21.60 27 Type(s) in Format 5
            $21.60 27 Types
    $42.39 Estimated cost File2
            $0.00   0.000 Hrs File8
               $1.95 3 Type(s) in Format 5
            $1.95 3 Types
    $1.95 Estimated cost File8
            $0.00   0.000 Hrs File582
               $2.70 3 Type(s) in Format 5
            $2.70 3 Types
    $2.70 Estimated cost File582
            OneSearch, 3 files, 0.166 Hrs FileOS
    $0.50 TYMNET
    $47.54 Estimated cost this search
    $49.20 Estimated total session cost   0.204 Hrs.
Logoff: level 29.01.05 B 18:24:15